1962

Adjustments for higher farm incomes in the hill area of north Louisiana

Clyde John St. Clergy

ecember 1962 Bulletin 560

Adjustments for Higher Farm Incomes In the Hill Area of North Louisiana

Clyde J. St. Clergy
Hill Farm Experiment Station

Floyd L. Corty
Agricultural Economics and Agribusiness

Louisiana State University and
Agricultural and Mechanical College
Agricultural Experiment Station
Charles W. Upp, Director

FOREWORD

This publication reports the results of a research study concerning adjustments for higher farm incomes in the hill area of North Louisiana.

Four D.A.E. circulars have previously appeared on this subject, each devoted to analysis of particular types of farms, namely, beef, dairy, cotton, and general farms. The circulars, however, were intended for limited distribution.

This bulletin consolidates and summarizes the results of the entire project. It is more than a descriptive report on the organization of existing farms. It evaluates existing practices and specifies the combination of resources required to attain annual returns of $3,000 and $5,000 for labor and investment in a farm business. It is specifically intended to answer penetrating questions concerning various farming enterprises. For example:

1. What size farm is needed to realize $3,000 income? $5,000 income?
2. How much capital is needed for investment? For operation?
3. What returns can be expected per acre? Per animal?
4. How much will investment and annual costs increase when attempting to increase income from $3,000 to $5,000?
5. How many acres of pasture and feed crops are needed? How many and what kind of livestock?

ACKNOWLEDGMENTS

Gratitude is expressed to personnel of the North Louisiana Hill Farm Experiment Station, and particularly to the Superintendent, Mr. Dawson M. Johns, for help in planning and promoting this study. Appreciation is also extended to Drs. Fred H. Wiegmann and Willard Woolf for reviewing the manuscript, and to the county agents and sample of farmers who willingly provided the necessary farm data. Although not mentioned individually, many other people contributed to the preparation of this report and rightfully deserve a word of thanks.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

Adjustments for Higher Farm Incomes In the Hill Area of North Louisiana

Clyde J. St. Clergy and Floyd L. Corty*

Introduction

Open land farming in Louisiana hill farm areas is rapidly giving way to forestry and other less intensive land uses. From 1954 to 1959 the total number of farms in the six-parish area, composed of Bienville, Claiborne, Jackson, Lincoln, Union, and Webster, decreased 42 percent, compared to 33 percent for the entire state. The decrease occurred in both commercial and noncommercial farms (Table 1). However, it is significant that the decrease in commercial farms occurred primarily among the groups realizing less than $5,000 gross annual income. The number of commercial farms making over $5,000 gross annual income increased 28 percent in the hill farm area in contrast to only 4 percent in Louisiana.

The rapid rate of forest development has been encouraged by financial assistance in the form of cost-sharing and rental payments through the Agricultural Conservation Program and the former Soil Bank Program as well as promotional campaigns sponsored by forestry enterprises. During the period 1955 to 1959, tree planting in the six-parish area, under both agricultural programs, totaled 87,813 acres, or an average of 17,963 acres per year. The extent of financial assistance and reforestation under the two programs is indicated in Table 2.

*Assistant Professor, Hill Farm Experiment Station, Homer, Louisiana, and Associate Professor, Department of Agricultural Economics and Agribusiness, Louisiana State University, respectively.

TABLE 1.—Number of Commercial Farms, and Noncommercial Farms in Six North Central Louisiana Parishes, and in Louisiana, 1954 and 1959

	Six North Central Louisiana Parishes**			Louisiana		
	1954	1959	Change	1954	1959	Change
	(Number)	(Number)	(Percent)	(Number)	(Number)	(Percent)
Noncommercial*	6,423	4,618	— 28	50,737	39,726	— 21
Commercial	3,028	1,410	— 53	60,467	34,712	— 42
Over $5,000	362	464	+ 28	11,989	12,497	+ 4
$250 to $4,999	2,666	946	— 42	48,478	22,215	— 54
Total	10,403	6,028	— 42	111,234	74,438	— 33

*Noncommercial — Farms on which the value of farm products sold was between $50 and $2,499, but the farm operator worked 100 or more days off the farm, or nonfarm income to operator or members of his family was greater than value of farm products sold.

**Part of the reduction in total number of farms is a result of a loss of 1,607 farms in the six-parish area and a loss of 11,135 farms in Louisiana because of a change in farm definition in the 1959 Agricultural Census.

Source: United States Bureau of the Census, *Census of Agriculture—Preliminary Series AC 59-1* (Washington, D. C.: United States Government Printing Office, December 1960), p. 1.

TABLE 2.—Number of Farms, Acreage, and Payments for Establishing Stands of Forest Trees Under the Agricultural Conservation Program and the Soil Bank Program, North Central Louisiana, 1955-1959

Program	1955	1956	1957	1958	1959
Agricultural Conservation Program					
Number of farms	417	488	617	621	804
Acreage planted to trees	7,338	7,418	8,979	7,996	10,476
Dollar payments	36,698	37,091	53,857	47,910	62,898
Soil Bank Program					
Number of farms	*	28	218	300	660
Acreage planted to trees	*	1,220	8,509	9,165	26,712
Dollar payments	*	8,691	62,182	63,807	173,092

Source: U. S. Department of Agriculture Commodity Stabilization Service, *Louisiana Report of Programs Administered by State and Parish A.S.C. Committees* (Alexandria: 1958-1959 and 1959-1960), pp. 45 and 53.
*Soil Bank Program not in effect.

Objectives of the Study

The gradual decline in open land farming is of major concern to farmers, businessmen, and professional agricultural workers. Many landowners in the area want to know what is required for successful farming in an area that is rapidly losing many of its farms. Some have expressed the opinion that a reallocation of resources will prove that open land farming can still be profitable.

This study was undertaken to determine what combinations of resources and farm enterprises are still profitable in the hill farm area of North Central Louisiana. In order to achieve this objective, hypothetical farms were designed for the major farm enterprises now existing in the area. Input-output data were obtained from a sample of above-average farms and were used with recommendations from local experiment stations to synthesize the hypothetical farms.

Method of Study

Data for this study were obtained by personal interview with 24 farmers in the hill farm area of North Central Louisiana. Selection of farms was limited to the four major farm types in the area, i.e., beef cattle, cotton, dairy, and general farms. Parish agricultural agents in the parishes of Bienville, Claiborne, Lincoln, Jackson, Union, and Webster supplied names of above-average (successful) farmers meeting the following conditions:

1. Farmers were resident owners.
2. At least 75 percent of gross income was obtained from the farm.
3. Fifty percent or more of gross income was obtained from the major farm enterprise. In the case of the general farm, no one enterprise could contribute more than 45 percent to gross income.

Six farms were selected for each of the four types of farming. Enumeration of the input-output data for each farm required two to three days. Data were collected the latter part of 1959; hence, input-output data reflect operations for calendar year 1958.

The better management practices of the six outstanding farmers in each enterprise were used to design a farm returning $3,000 to the farmer for his labor and investment and also one returning $5,000. Resources were combined in conformance with the practices of the above-average farmers in the sample. Where it was apparent, however, that the above-average farmers were not using the latest experiment station recommendations, adjustments were made to incorporate any superior practices recommended by experiment stations.

Budgeting was used to develop the model farms. Budgeting is an organized method of testing the relative profitability of alternative production practices or alternative organizations of the farm unit. A complete budget, or whole farm approach, was used in this study.

Accounting Procedure

Costs were divided into two major categories; namely, (1) out-of-pocket costs plus depreciation, and (2) out-of-pocket costs plus depreciation plus interest on investment.

Out-of-Pocket Costs Plus Depreciation — Included in this classification are all out-of-pocket costs incurred during the year, such as feed, fertilizer, seed, hired labor, etc. In addition, depreciation on all farm equipment and buildings was included. Many farmers make managerial decisions based only on out-of-pocket costs. Over the long run, however, the farmer must be able to replace capital consumed in the production process. It is believed that farmers should follow practices of other businessmen and set aside funds each year to cover fixed capital assets consumed in the production process.

Absent from the above classification are charges for operator and family labor. Many farmers do not visualize this as a cost. They consider their labor as being readily available and without alternative employment value. Therefore, returns above all costs would be returns to labor. This is a reasonable assumption for most farmers in the area. Alternative employment opportunities are very scarce, and the chief alternative available to the majority of the farmers is abandonment or sale of the farm and migration to another area.

Out-of-Pocket Costs Plus Depreciation Plus Interest on Investment— Interest on investment is another cost that many farmers ignore. Most farmers feel that other investment opportunities would not return satisfactions equal to those derived from farm ownership. This concept applies particularly to farmers who own farms without mortgage encumbrance. On the other hand, a person who must borrow capital to enter farming should give this cost (interest on investment) the utmost consideration.

Limitations of the Study

Averages used in designing farm plans are subject to the limitations normally associated with averages. Therefore, the farm plans presented in this publication should serve primarily as guides or bench marks.

TABLE 3.—General Summary Table, Sample of Six Beef Cattle Farms, North Central Louisiana, 1958-59

Farms	Returns to labor and investment, per farm	Returns to labor and investment, per acre	Size of herd	Acres in farm	Total investment
	(Dollars)	(Dollars)	(Number)	(Acres)	(Dollars)
One	2,543	8.68	63	293	38,585
Two	2,092	4.42	106	473	90,174
Three	1,793	2.17	167	825	99,910
Four	1,731	4.99	93	347	76,336
Five	1,461	2.62	60	557	67,105
Six	9	.06	33	143	29,465
Average— all farms	1,605	3.82	87	440	66,929

Beef Cattle Enterprise

General Description of Sample Beef Cattle Farms

Table 3 presents a general summary of the six beef cattle farms included in this study. The farms are arrayed according to annual income. Net returns above out-of-pocket costs plus depreciation ranged from a low of $9 to a high of $2,543. On a per acre basis, net returns ranged from $0.06 to $8.68. The farms ranged in size from 143 acres to 825 acres and averaged 440 acres. Herd size ranged from 33 to 167. Total farm investment ranged from $29,465 to $99,910 and averaged $66,929.[1]

One outstanding characteristic of the group of sample farms was that there was approximately one acre of bottom land soil for every five acres of hill soil.

Economic Evaluation of the Six Sample Beef Farms

The basic weaknesses found in the pasture and feeding programs of the six sample farms are listed as follows:

1. Winter pasture with a late winter and early spring calving program was not economical. The cost of TDN (total digestible nutrients) obtained from winter pasture, on land that was also used to provide hay, was three cents per pound. (TDN requirements could be supplied at less cost through corn and grass hay.) (See Appendix Table 1.)
2. All sample farm operators could have reduced feed costs by feeding corn instead of cottonseed meal in the winter ration. The basic reason for feeding cottonseed meal, according to the farmers, was to add protein to the winter ration. However, protein in excess of recommended amounts was already being supplied by corn, and oat and grass hay. (See Appendix Table 2.)

[1]More detailed information concerning the beef cattle enterprise can be found in D.A.E. Circular 295, Department of Agricultural Economics and Agribusiness, Louisiana State University, Baton Rouge, Louisiana, November 1961.

3. Low returns per animal were primarily due to inefficient utilization of pastures. Either the herds were too small to utilize all the forage produced or pastures were overstocked. The most efficient farmer provided adequate forage from late-February to mid-November by supplementing approximately 1.5 acres of unimproved pasture per head with 0.6 acre of improved pasture and 1.3 acres of woodland pasture.

Hypothetical Model Beef Farms Yielding $3,000 To Labor and Investment

This section presents two synthetic farm models, each returning approximately $3,000 to operator labor and investment. Farm A is a synthesis of desirable practices observed on the sample of beef cattle farms selected for study. Farm B incorporates pasture and feeding practices recommended by Louisiana Experiment Stations.

Assumptions – Input-output values are based on data obtained from the sample of six beef cattle farms.

The cow herd consisted of good-quality, Hereford brood cows valued at $150 per cow, heifers at $75, and bulls at $500.

Open land was valued at $126 per acre, and to each acre of open land, 0.23 acre, at $60 per acre, was added for woodland and the homestead area. The aggregate value of the farm land included the value of the dwelling.

Investment in barns was limited to simple hay barns that provided storage for 230 tons of hay. Investment in farm implements and specialized livestock equipment was $7,641.

Miscellaneous expenses and depreciation charges were allocated on a per head basis at the rate of $7.87 and $6.84, respectively, to correspond with costs observed on the sample farms (Appendix Table 3).

Returns to Model Beef Farms A and B are based on:

1. A 90 percent calf crop.
2. An 11 percent replacement rate, 3 percent of which was death loss.
3. A midwinter calf crop, beginning in January and continuing through late February and early March, with the calves to be marketed in the latter part of September. The calves of Model Beef Farm A are sold at $22 per hundredweight and the cows at $14 per hundredweight. The cows of Model Beef Farm B average 1,000 pounds and the calves 455 pounds due to the higher quality forage provided. Although cow prices are considered the same for both farms, the higher quality calves on Farm B are valued at $25 per hundredweight.
4. The timbered acreage can provide approximately 130 board feet of sawlogs and 0.6 cord of pulpwood per acre annually. (This was the amount of saw timber and pulpwood produced on a representative farm woodlot selected and cruised by a forester from the North Louisiana Hill Farm Expeirment Station.)

Organization and Management of Beef Farm A (Extensive Model)—Pasture requirements for Beef Farm A are 1.5 acres of unimproved pasture and 0.6 acre of improved pasture per head. Feeding consists primarily of corn and hay at the rate of 1,643 pounds of TDN per cow, obtained from 2,760 pounds of common Bermuda hay and 8.6 bushels of corn, cob, and shuck meal. This amount of hay and corn can be produced on about 0.8 acre and 0.2 acre, respectively. Since the hay is harvested in late May or early June, the hay meadow is also used the rest of the year for grazing.

Data regarding yields, cost of establishing and maintaining pastures, and labor requirements are given in Appendix Tables 4-11.

Organization and Management of Beef Farm B (Intensive Model)—Farm B differs from Farm A only in that the pasture and winter feeding program incorporates experiment station recommendations regarding use of fertilizer, pasture management, and winter feeding. The heavier applications of fertilizer and the intensive use of Coastal Bermuda hay in the feeding program contribute to the slightly higher cash costs and a reduction in acreage requirements.

Data pertaining to labor requirements and establishment and maintenance of pastures and hay meadows are given in Appendix Tables 12-16.

Capital required for beef cattle farms designed to return at least $3,000 to operator labor and capital investment is given in Table 4. Note the somewhat higher investment associated with the more intensive system. Furthermore, in this system, capital has been shifted from land to livestock, thus increasing the risk.

Estimated costs and returns associated with the extensive and intensive beef farm models designed to give at least $3,000 to operator labor and capital investment are given in Tables 5 and 6, respectively.

TABLE 4.—Capital Required to Obtain a Return of at Least $3,000 to Labor and Investment, Beef Farming, North Central Louisiana, (1958-59 Prices)

	Extensive		Intensive	
	Number	Value	Number	Value
Livestock				
Brood cows @ $150	75	$11,250	143	$21,450
Heifers @ 75	8	600	16	1,200
Bulls @ 500	3	1,500	5	2,500
Total value of livestock		$13,350		$25,150
Barns		$ 3,987		$ 3,987
Land				
Open acres @ $126	267	$33,642	196	$24,696
Timber acres @ $60	61	3,660	36	2,160
Total value of land		$37,302		$26,856
Value of farm equipment		$ 7,641		$ 7,641
Total capital investment		$62,280		$63,634

TABLE 5.—Estimated Costs and Returns of Beef Farm A (Extensive Plan), Returning About $3,000 to Labor and Investment, North Central Louisiana, (1958-59 Prices)

Gross returns		
Calves	60 (428 lbs.) @ $22 per cwt.	$5,650
Cows (culls)	6 (800 lbs.) @ $14 per cwt.	672
Timber	61 acres @ $6.75	412
Total gross returns		$6,734
Costs		
Improved pasture	52 acres @ $ 7.50	$ 390
Unimproved pasture	129 acres @ $ 1.55	200
Hay meadow	69 acres @ $15.99	1,103
Corn	17 acres @ $22.75	387
Timber	61 acres @ $ .34	21
Miscellaneous	$7.03 per head (X 86 beef herd)	604
Depreciation	$6.84 per head (X 86 beef herd)	588
Marketing	4% of sales price of animal	253
Taxes	328 acres @ $ .15	49
Total out-of-pocket plus depreciation costs		$3,595
Returns to labor and investment		$3,139
Returns per head		$36.50
Returns per acre		$ 9.57
Interest on investment (4 percent of $62,280)		$2,491
Returns to labor	($3,139 - $2,491)	$ 648

TABLE 6.—Estimated Costs and Returns of Farm B (Intensive Type), Returning About $3,000 to Labor and Investment, North Central Louisiana, (1958-59 Prices)

Gross returns		
Calves	113 (455 lbs.) @ $25 per cwt.	$12,854
Cows (cull)	11 (1,000 lbs.) @ $14 per cwt.	1,540
Timber	36 acres @ $6.75	243
Total gross returns		$14,637
Costs		
Improved pasture	164 acres @ $35.21	$5,774
Hay meadow	32 acres @ $88.90	2,845
Timber	36 acres @ $ .34	12
Miscellaneous	$7.03 per head (X 164 beef herd)	1,153
Depreciation	$6.84 per head (X 164 beef herd)	1,122
Marketing	4% of sales price of animal	576
Taxes	232 acres @ $0.15	35
Total out-of-pocket plus depreciation costs		$11,517
Returns to labor and investment		$ 3,120
Returns per head		$ 19.02
Returns per acre		$ 13.45
Interest on investment (4 percent of $63,634)		$ 2,545
Returns to labor ($3,120 - $2,545)		$ 575

Hypothetical Model Beef Farms Yielding $5,000 To Labor and Investment

Two additional beef farms, Models C and D, were designed to return approximately $5,000 to operator labor and investment. Farm C incorporates desirable practices observed on the six sample beef cattle farms, and Farm D introduces pasture and feeding practices recommended by local experiment stations.

Assumptions and estimated values of land and livestock are the same as for the previously mentioned Farms A and B. Investment in barns and farm equipment is slightly larger due to the larger farm sizes.

Even with a larger herd and larger land area, labor requirements are not a serious problem. Appendix Tables 17 and 18 present a monthly schedule of labor needed to operate Farms C and D.

The capital investments required for Farms C and D are given in Table 7. Note that for a given income on a large-scale farm the total capital investment is lower for an intensive operation, whereas on the smaller farm the intensive system requires more total capital investment than the extensive farming system. (See Table 4.)

Estimated costs and returns associated with extensive and intensive beef farms designed to return at least $5,000 to operator labor and capital investment are given in Tables 8 and 9, respectively.

Table 10 presents a summary of the four hypothetical farms designed in this study. A comparison of extensive models and intensive models indicates that although the total acreage of land needed to obtain the desired levels of income can be decreased considerably by utilizing intensive methods, the total annual working capital outlay must be increased substantially. In order to obtain a return to labor and investment of $3,000, the intensive model requires 96 acres less land but an increase in annual working capital of $7,392. At the $5,000

TABLE 7.—Capital Required to Obtain a Return of at Least $5,000 to Labor and Investment on a Beef Farm, North Central Louisiana, (1958-59 Prices)

	Extensive		Intensive	
	Number	Value	Number	Value
Livestock				
Brood cows @ $150	127	$19,050	219	$32,850
Heifers @ 75	14	1,050	24	1,800
Bulls @ 500	4	2,000	7	3,500
Total value of livestock		$22,100		$38,150
Barns		$ 4,041		$ 4,041
Land				
Open acres @ $126	450	$56,700	299	$37,674
Timbered acres @ $ 60	103	6,180	68	4,080
Total value of land		$62,880		$41,754
Value of farm equipment		$ 7,641		$ 7,641
Total capital investment		$96,662		$91,586

income level, the intensive model requires 186 acres less land but an increase in working capital of $10,815. This may explain why many beef cattle farmers have not turned to intensive pasture and feeding programs. An annual cash outlay of 7 to 10 thousand dollars could

TABLE 8.—Estimated Costs and Returns of Beef Farm C, Returning About $5,000 to Labor and Investment, North Central Louisiana (Extensive Plan), (1958-59 Prices)

Gross returns		
Calves	100 (428 lbs.) @ $22 per cwt.	$ 9,416
Cows (culls)	10 (800 lbs.) @ $14 per cwt.	1,120
Timber	103 acres @ $6.75	695
Total gross returns		$11,231
Costs		
Improved pasture	87 acres @ $ 7.50	$ 652
Unimproved pasture	218 acres @ $ 1.55	338
Hay meadow	116 acres @ $15.99	1,854
Corn	29 acres @ $22.95	666
Timber	103 acres @ $ 0.34	35
Miscellaneous	$7.03 per head (X 145 beef herd)	1,019
Depreciation	$6.84 per head (X 145 beef herd)	992
Marketing	4% of sales price of animal	421
Taxes	553 acres @ $ 0.15	83
Total out-of-pocket costs plus depreciation		$ 6,060
Returns to labor and investment		$ 5,171
Returns per cow		$ 35.71
Returns per acre		$ 9.36
Interest on investment (4 percent of $96,662)		$ 3,866
Returns to labor	($5,171 - $3,866)	$ 1,305

TABLE 9.—Estimated Costs and Returns of Beef Farm D, Returning About $5,000 to Labor and Investment, North Central Louisiana (Intensive Plan), (1958-59 Prices)

Gross returns		
Calves	173 (455 lbs.) @ $25 per cwt.	$19,679
Cows (cull)	18 (1,000 lbs.) @ $14 per cwt.	2,520
Timber	68 acres @ $6.75	459
Total gross returns		$22,658
Costs		
Improved pasture	250 acres @ $35.21	$ 8,802
Hay meadow	49 acres @ $88.90	4,356
Timber	68 acres @ $ .34	23
Miscellaneous	$7.03 per cow (X 250 beef herd)	1,758
Depreciation	$6.84 per cow (X 250 beef herd)	1,710
Marketing	4% of sales price of animal	889
Taxes	367 acres @ $ 0.15	55
Total out-of-pocket plus depreciation costs		$17,593
Returns to labor and investment		$ 5,065
Returns per cow		$ 20.26
Returns per acre		$ 13.80
Interest on investment (4 percent of $91,586)		$ 3,663
Returns to labor	($5,065 - $3,663)	$ 1,402

TABLE 10.—Beef Cattle Farm Plans Designed to Provide $3,000 and $5,000 Returns to Labor Investment, North Central Louisiana, (1958-59 Prices)

Item	$3,000 Level		$5,000 Level	
	Extensive Plan (A)	Intensive Plan (B)	Extensive Plan (C)	Intensive Plan (D)
Size				
Acres	328	232	553	367
Herd (No. of head)	86	164	145	250
Pasture				
Improved (acres)	52	164	87	250
Unimproved (acres)	129	. . .	218	. . .
Feed crops				
Corn (acres)	17	. .	29	.
Hay (acres)	69	32	116	68
Out-of-pocket costs	$ 3,007	$10,395	$ 5,068	$15,883
Out-of-pocket costs plus depreciation	$ 3,595	$11,517	$ 6,060	$17,593
Gross returns	$ 6,734	$14,637	$11,231	$22,658
Returns per head	$ 36.50	$ 19.02	$ 35.66	$ 20.26
Returns per acre	$ 9.57	$ 13.45	$ 9.36	$ 13.80
Investment	$62,280	$63,634	$96,662	$91,586

mean a sizeable cash loss during an unfavorable year. The extensive models which typify the current practices of farmers in the hill farm area reflect their more conservative thinking. More land is used, but annual cash outlay is small. Thus, the risk of loss is considerably reduced.

The Dairy Enterprise

General Description of the Sample Dairy Farms

Of the six sample dairy farms selected for study, two were located in Bienville Parish and one each in the parishes of Claiborne, Jackson, Lincoln, and Union. A general summary of returns, farm size, number of milking cows, and total investment of the six sample dairy farms is presented in Table 11.

TABLE 11.—General Summary Table, Six Dairy Farms, North Central Louisiana, (1958-59)

Farms	Net returns to labor and investment		Average number of cows in lactation	Farm size	Total investment
	Per farm	Per acre			
	(Dollars)	(Dollars)	(Number)	(Acres)	(Dollars)
One	7,484	12.05	81	621	144,412
Two	4,603	26.76	38	172	47,261
Three	2,429	18.40	30	132	37,401
Four	2,185	9.62	37	227	51,746
Five	1,953	12.85	36	152	40,049
Six	— 274	—1.03	28	265	29,583
Sample average	3,063	11.71	42	262	58,409

Five of the six farms were mortgaged and three of the farms had obtained short-term loans. The mortgages ranged in size from $700 to $52,000 and the short-term loans from $1,200 to $29,000.

Economic Evaluation of the Six Sample Dairy Farms

The high net return to labor and investment per acre on the most successful farm was basically due to a better-than-average milking herd in combination with a more efficient pasture and concentrate feeding program. The farm operator provided 1.1 acres of improved permanent pasture and 0.3 acre of temporary summer pasture, per head, for the milking herd. About 1.7 acres of unimproved pasture per head were supplied to dry cows and heifers during the summer months. All animals were placed on oat forage at the rate of 1.1 acres per head during the winter months. The entire herd was fed hay on a free-choice basis throughout the winter months, and some hay was fed to dry cows and heifers during the hot part of the summer when the unimproved permanent pasture did not provide sufficient forage.

Temporary summer pasture at the rate of 0.3 acre per head, on the most efficient farm, was not sufficient to adequately supplement the improved permanent pasture during the months of July and August. Another farm operator, however, reported excess forage on 0.9 acre of temporary summer pasture per cow. Thus, it would appear that approximately 0.5 acre of temporary summer pasture per cow in combination with 1.1 acres of improved pasture would supply adequate forage.

Two major weaknesses were evident in the feeding program of the most efficient farm. First, the operator could have fed the dry cows and heifers a less expensive winter ration. Second, although the concentrate-milk ratio was higher than for other farmers, it was still below the recommended ratio of one pound of concentrate to three pounds of milk, for cows grazed on average pasture (Table 12).

The negative returns per acre on Farm No. 6 resulted from exceptionally high pasture and purchased feed costs. These costs were higher than normal because: first, the operator believed that most feeds could be purchased at less cost than they could be raised on the farm,

TABLE 12.—Relationship Between Milk Production per Cow, Milk-Concentrate Ratio, and Income, Six Dairy Farms, North Central Louisiana, 1958-59

Farms	Net returns per cow	Pounds of milk per cow	Pounds of milk per pound of concentrate
	(Dollars)	(Pounds)	(Pounds)
Two	67.69	5,821	2.4
One	57.57	8,583	1.7
Three	43.38	2,751	1.7
Four	36.42	3,700	1.2
Five	35.51	3,001	1.1
Six	—5.95	5,613	2.2

and second, the operator believed that it was less costly to hire all tillage operations rather than purchase the necessary equipment and perform the operations himself. The negative returns tend to disprove these beliefs.

Land resources were not used to capacity on any of the sample farms. Producing summer supplementary pasture on the same acreage used for temporary winter pasture would support larger herds or, on the other hand, require less land. The practice of planting only one feed crop on land used for temporary pasture left land resources unused for half of the year.[2]

Hypothetical Model Dairy Farms Yielding $3,000 To Labor and Investment

Two model dairy farms were designed to return $3,000 to operator labor and investment, in much the same manner as that used in designing the model beef cattle farms. Farm A is a synthesis of desirable practices observed on the six sample dairy farms, and Farm B incorporates pasture and feeding practices recommended by Louisiana experiment stations.

Table 13 presents the assumed values and practices used to compute

[2]More detailed information concerning the dairy enterprise can be found in D.A.E. Circular 296, Department of Agricultural Economics, Louisiana State University, Baton Rouge, Louisiana, November 1961.

TABLE 13.—Assumed Values and Practices for Dairy Farms A and B, North Central Louisiana, 1958-59*

Item	Dairy Farm A (Extensive)	Dairy Farm B (Intensive)
Assumed values		
Cows@	$ 200	$ 250**
Heifer (over one year)@	150	188**
Heifer (under one year)@	60	75
Bull@	200	
Open land (per acre)	119	119
Woodland, wasteland, etc. (per acre)	60	60
Barns	3,738	3,738
Milk parlor	1,083	1,083
Farm equipment	5,603	6,513
Dairy equipment	2,466	2,466
Silo	—	1,223**
Blend price (per hundredweight)	5.70	5.70
Miscellaneous expenses (per head)***	13.49	11.44
Depreciation (per head)	15.44	17.37
Assumed practices		
Lactation period (months)	10	10
Replacement rate (percent)	23	23
Calf crop (percent)	77	77
Milk production (lbs. 4% butterfat)	5,821	7,500**

*Based on data obtained from sample farms.
**Adapted from Woolf, C. M., *Resource Requirements and Returns For a Family-Size Dairy Farm* (Unpublished Thesis; Baton Rouge: Louisiana State University, January 1960), p. 97.
***See Appendix Table 19 for list of expenses included in the miscellaneous category.

total investment for both model farms. Wherever practical, investment and practices for different components of the dairy operation were based on data obtained from the sample dairy farms.

Organization and Management of Dairy Farm A (Extensive Model) — On a per head basis, it was assumed that 1.1 acres of improved pasture seeded to lespedeza, crimson clover, and common Bermuda grass, in combination with 0.5 acre of millet, would produce sufficient early spring, summer, and fall grazing. In addition, 1.1 acres of winter pasture per head were provided. Part of the winter pasture, however, was harvested for hay. In addition, part of the acreage was plowed under in April and planted to millet for the temporary summer pasture.

It was also assumed that 1.7 acres of unimproved pasture were available to each dry cow and heifer during the summer. Hay is needed to supplement the unimproved pasture during the latter half of June and all of July. Hay is also needed to carry the dry cows and heifers through the winter at the rate of 2,760 pounds for each dry cow and heifer over one year of age and 760 pounds for each heifer under one year.

Fertilizer applications and hay yields are based on data obtained from the sample of beef cattle farms. Since only three of the dairy farms had hay meadows and the variations in yield, fertilizer application, and type of forage were so great, it was necessary to evaluate the data very carefully. Thus, it was assumed that approximately 0.6

TABLE 14.—Capital Investment Required to Obtain $3,000 Return to Labor and Investment on Dairy Farms A and B, North Central Louisiana

		Farm A		Farm B	
		Number	Value	Number	Value
Livestock					
Dairy cows	@ $200-$250	20	$ 4,000	16	$ 4,000
Heifers (over one year)	@ 150- 188	5	750	4	752
Heifers (under one year)	@ 60- 75	7	420	6	450
Bull	@ 200	1	200	..	...
Total livestock			$ 5,370		$ 5,202
Buildings					
Barns			$ 3,738		$ 3,738
Milk parlor			1,083		1,083
Silo					1,223
Total buildings			$ 4,821		$ 6,044
Land					
Open land (acres)	@ $119	68	$ 8,092	40	$ 4,760
Woodland (acres)	@ 60	10	600	6	360
Total land			$ 8,692		$ 5,120
Farm equipment			$ 5,603		$ 6,513
Dairy equipment			$ 2,466		$ 2,466
Total capital investment			$26,952		$25,345

acre per head would be used for hay meadow. After the hay harvest, this acreage is used to supplement the unimproved pasture to carry the dry cows and heifers through the summer.

Appendix Tables 20-26 present the annual cost of establishing and maintaining the different types of pastures. Based on the assumed pasture program, one pound of concentrate is fed for each three pounds of milk produced.

Dry cows and heifers over one year are carried entirely on pasture forage during the summer. The winter feeding program consists chiefly of corn and hay in amounts specified in the Model A Beef Farm. (See Page 10.)

Organization and Management of Dairy Farm B (Intensive Model)—Inputs used in designing Dairy Farm B were obtained from various experiment station reports that were applicable to the North Central Louisiana area. Pasture acreage per head on Farm B is assumed to consist of 1.1 acres of Coastal Bermuda permanent pasture, 0.5 acre of temporary summer pasture, and 1.25 acres of temporary winter pasture.

Harvested forage crops are fed at the rate of three tons of silage and

TABLE 15.—Estimated Costs and Returns of Dairy Farm A, North Central Louisiana

Gross returns		
Milk	1138.6 cwt. of milk @ $5.70	$6,490
Cull cows	4 cows @ $137	548
Calves	22 calves @ $8	64
Timber	10 acres @ $6.75	67
Total gross returns		$7,169
Costs		
Improved pasture	19 acres @ $ 9.60	$ 182
Unimproved pasture	15 acres @ $ 1.55	23
Temporary summer pasture	10 acres @ $17.39	174
Temporary winter pasture	19 acres @ $14.39	463
Harvesting hay from winter pasture	9 acres @ $ 7.58	68
Hay meadow	22 acres @ $15.99	352
Woodland	10 acres @ $ .33	3
Dairy concentrate (16%)	388.1 cwt. @ $3.05	1,184
Corn, cob, and shuck meal	54.2 cwt. @ $2.00	108
Calf feed	2.6 cwt. of starter @ $10.25	27
	6.6 cwt. of grower @ $ 3.95	26
	25.6 cwt. of milk @ $5.70	146
Hired labor	30.2 ten-hour days @ $5.00	151
Milk hauling	1138.6 cwt. @ .36	410
Miscellaneous	$11.37 per animal unit (x 29)	330
Depreciation	$15.44 per animal unit (x 29)	448
Taxes	78 acres @ $0.38	30
Total costs		$4,125
Net returns to labor and investment		$3,044
Returns per cow		104.96
Returns per acre		39.02
Interest on investment (4% of $26,952)		1,078
Returns to labor		1,966

TABLE 16.—Estimated Costs and Returns of Dairy Farm B, North Central Louisiana, (1958-59 Prices)

Gross returns		
Milk	1178 cwt. of milk @ $5.70	$6,715
Cull cows	3 calves @ $137	411
Calves	7 calves @ $8	56
Timber	6 acres @ $6.75	40
Total gross returns		$7,222
Costs		
Improved pasture	22 acres @ $35.21	$ 775
Temporary summer pasture	8 acres @ $24.66	197
Temporary winter pasture	16 acres @ $30.76	492
Millet silage	2 acres @ $48.62	97
Silage harvested from winter pasture	3 acres @ $17.71	53
Surplus hay from pasture	5.9 tons @ $4.89	29
Coastal Bermuda hay meadow	2 acres @ $88.90	178
Woodland	6 acres @ $ .33	2
Dairy concentrates (16%)	300 cwt. @ $3.05	915
Calf feed	2.2 cwt. of starter @ $10.25	23
	5.7 cwt. of grower @ $3.95	22
	22.0 cwt. of milk @ $5.70	125
Hired labor	30.2 ten-hour days @ $5.00	151
Miscellaneous	$9.32 per head (x 22)	205
Breeding fees	$5.00 per cow (x 16)	80
Milk hauling	1178 cwt. @ $ .36	424
Depreciation	$17.37 per head (x 22)	382
Taxes	46 acres @ .38	17
Total costs		$4,167
Net returns to labor and investment		$3,055
Returns per cow		$ 138.86
Returns per acre		$ 66.41
Interest on investment (4% of $25,345)		$1,014
Net returns to labor		$2,041

one ton of Coastal Bermuda grass hay per head. Silage is obtained from part of the temporary winter pasture and the acreage planted to millet. Hay is harvested from the permanent pasture and a Coastal Bermuda hay meadow. In consideration of the improved pasture and silage program, concentrates are fed at the rate of one pound for each four pounds of milk produced. Annual costs for establishing and maintaining pastures and for providing hay and silage are given in Appendix Tables 20-26.

Labor Inputs — The operator is required to work 25 to 29 eight-hour days nine months of the year. Additional labor is hired for hay harvesting in May and June and for pasture seeding in September. Labor requirements on Farm B are less stringent than for Farm A because of substituting silage for some hay and pasture (Appendix Tables 27 and 28). Additional help is hired to milk and perform other day to day operations. Hired help of this type on the sample farms averaged 59 days out of the year.

Costs and Returns — Table 14 presents the capital investment required for Model Farms A and B, while Tables 15 and 16 present summaries of the costs and returns. When interest on investment is deducted, net returns to the operator for his labor decrease to $1,966 on Farm A and to $2,041 on Farm B. If a charge of 50c per hour is made for operator's labor, net returns above all costs decrease to $967 for Farm A and to $1,436 for Farm B.

Hypothetical Model Dairy Farms Yielding $5,000 To Labor and Investment

As was done with the beef farms, two hypothetical model dairy farms were designed to return approximately $5,000 above out-of-pocket costs plus depreciation. Dairy Farm Plan C results from a synthesis of desirable practices observed on the six sample farms, and Farm Plan D incorporates pasture and feeding practices recommended by Louisiana Experiment Stations.

Organization and Management of Dairy Farm C (Extensive Model) — Assumptions and estimated value of land and livestock are the same as for Farms A and B. Investment in buildings and equipment remains the same. Essentially, the same equipment is needed for a 15-cow dairy herd as for a 35-cow dairy herd.

The pasture and feeding program for Dairy Farm C is assumed to be the same as for Dairy Farm A. Labor requirements are greater than for Farm A because of the larger milking herd and larger land

TABLE 17.—Capital Investment Required for Dairy Farms C and D, North Central Louisiana

		Extensive (C)		Intensive (D)	
		Number	Value	Number	Value
Livestock					
Dairy cows	@ $200 & $250	32	$ 6,400	27	$ 6,750
Heifers (over one year)	@ 150 & 188	7	1,050	6	1,128
Heifers (under one year))	@ 60 & 75	9	540	8	600
Bulls	@ 200	1	200	..	...
Total livestock			$ 8,190		$ 8,478
Buildings					
Barns			$ 3,738		$ 3,738
Milk parlor			1,083		1,083
Total buildings			$ 4,821		$ 4,821
Land					
Open land (acres)	@ $119	104	$12,376	65	$ 7,735
Woodland (acres)	@ $ 60	15	900	9	540
Total land			$13,276		$ 8,275
Farm equipment			$ 5,603		$ 6,513
Dairy equipment			$ 2,466		$ 2,466
Total capital investment			$34,356		$31,776

TABLE 18.—Estimated Costs and Returns of Dairy Farm C, North Central Louisiana, (1958-59 Prices)

Gross returns		
Milk	1829.8 cwt. of milk @ $5.70	$10,430
Cull cows	6 cows @ $137	822
Calves	15 calves @ $8	120
Timber	15 acres @ $6.75	100
Total gross returns		$11,473
Costs		
Improved pasture	30 acres @ $ 9.60	$ 288
Unimproved pasture	22 acres @ $ 1.55	34
Temporary summer pasture	15 acres @ $17.39	261
Temporary winter pasture	30 acres @ $24.39	732
Harvesting hay from winter pasture	15 acres @ $ 7.58	114
Hay meadow	22 acres @ $15.99	352
Timberland	15 acres @ $ .33	5
Dairy concentrate (16%)	620.9 cwt. @ $3.05	1,894
Corn, cob, and shuck meal	78.3 cwt. @ $2.00	157
Calf feed	3.3 cwt. of starter @ $10.25	34
	8.6 cwt. of grower @ $3.95	34
	32.9 cwt. of milk @ $5.70	193
Hired labor	58.8 ten-hour days @ $5.00	294
Miscellaneous	$13.49 per animal unit (x 43)	580
Milk hauling	1829.8 cwt. of milk @ $0.36	659
Depreciation	15.44 per animal unit (x 43)	664
Taxes	119 acres @ .38	45
Total cost		$ 6,340
Net returns to labor and investment		$ 5,133
Returns per cow		$ 119
Returns per acre		$ 43.43
Interest on investment (4% of $34,356)		$ 1,374
Net returns to labor		$ 3,759

area. Labor requirements, however, can still be supplied by the farm operator and his family, except for the months of May, June, and September. (See Appendix Table 29.)

Organization and Management of Dairy Farm D (Intensive Model)— The pasture and feeding program of Dairy Farm D is assumed to be the same as for Dairy Farm B.

Labor requirements for Dairy Farm D are not as stringent as for Farm C. Total hours of labor are higher, but the work loads are more evenly distributed through the year. (See Appendix Table 30.)

Costs and Returns — Table 17 gives the fixed capital investment required for Dairy Farms C and D, and Tables 18 and 19 present estimated costs and returns for the two farms. Note that when interest on investment, computed at 4 per cent, is included as a cost, returns to labor decrease to about $3,800. Furthermore, if a charge is made for the operator's labor, at 50 cents an hour, net profits amount to about $2,600.

Table 20 presents a summary of the important features of the four model dairy farms. A comparison of the models at the two income

levels reveals only slight differences in costs and returns. At the $3,000 income level, the extensive model requires 32 more acres than the intensive model, and at the $5,000 income level 45 more acres are needed in the extensive model. Net returns per acre and per cow are greater on the intensive model dairy farms and total investment is less.

One basic weakness stands out in the current farm operations. The level of production of the highest producing cows on the sample farms is low in comparison to the production average for cows in the major milk producing states. Apparently the favorable returns with relatively low investment can be attributed to institutional protection of milk prices.

The major conclusion to be drawn from the dairy farm data is that the dairy enterprise is relatively profitable in the North Central Louisiana area at prevailing milk prices. The farm models indicate that an adequate return on investment can be obtained even when a charge is made for the operator's labor. It must be recognized, however, that the dairy enterprise, unlike the beef enterprise, is subject to

TABLE 19.—Estimated Costs and Returns of Dairy Farm D, North Central Louisiana, (1958-59 Prices)

Gross returns		
Milk	1995.7 cwt. of milk @ $5.70	$11,375
Cull cows	4 cows @ $137	548
Calves	12 calves @ $8	96
Timber	9 acres @ $6.75	61
Total gross returns		$12,080
Costs		
Improved pasture	36 acres @ $35.21	$ 1,268
Temporary summer pasture	12 acres @ $24.66	296
Temporary winter pasture	25 acres @ $30.76	769
Millet silage	4 acres @ $48.62	194
Silage from winter pasture	5 acres @ $17.71	88
Surplus hay from pasture	9.6 tons @ $4.89	47
Coastal Bermuda hay meadow	4 acres @ $88.90	356
Timber	9 acres @ $ .33	3
Dairy concentrates (16%)	506.2 cwt. @ $3.05	1,544
Calf feed	3.0 cwt. of starter @ $10.25	31
	7.6 cwt. of grower @ $3.95	30
	29.3 cwt. of milk @ $5.70	167
Hired labor	58.8 ten-hour days @ $5.00	294
Miscellaneous	$11.44 per animal unit (x 36)	412
Breeding fees	$5. per cow	135
Milk hauling	1995.7 cwt. @ $.36	718
Depreciation	$17.37 per animal unit (x 36)	625
Taxes	74 acres @ $.38	28
Total cost		$ 7,005
Net returns to labor and investment		$ 5,075
Returns per cow		$ 141
Returns per acre		$ 69
Interest on investment (4% x $31,776)		$ 1,271
Returns to labor		$ 3,804

TABLE 20.—Some Measurements for Dairy Farms Designed to Provide $3,000 and $5,000 Returns to Labor and Investment, North Central Louisiana, (1958-59 Prices)

Item	$3,000 Level		$5,000 Level	
	Extensive Plan (A)	Intensive Plan (B)	Extensive Plan (C)	Intensive Plan (D)
Size				
Acres	78	46	119	74
Herd (number)	29	22	43	36
Pasture				
Improved permanent (acres)	19	22	30	36
Unimproved permanent (acres)	15	.	22	
Temporary summer (acres)	10	8	15	12
Temporary winter (acres)	19	16	30	25
Feed crops				
Silage (acres)	..	2	..	4
Hay meadow (acres)	22	2	22	4
Out-of-pocket costs	$ 3,677	$ 3,785	$ 5,676	$ 6,380
Out-of-pocket costs (plus depreciation)	$ 4,125	$ 4,167	$ 6,340	$ 7,005
Gross returns	$ 7,169	$ 7,222	$11,473	$12,080
Returns per head	$104.96	$138.86	$119.37	$140.97
Returns per acre	$ 39.02	$ 66.41	$ 43.13	$ 68.58
Cost per cwt. of milk	$ 3.62	$ 3.54	$ 3.46	$ 3.51
Investment	$26,952	$25,345	$34,356	$31,776

state and federal regulation in this area. Entry into dairy farming is somewhat restricted. At the present time, a farmer wishing to enter dairying must sell his milk the first year at a Class II price. As an example, if the gross returns of Model Dairy Farm C were computed on the basis of a Class II price of $3.25 per hundredweight, the operator of Model Dairy Farm C would have to absorb a loss of $933 for the first year. Further limitations to the entry of new producers are expected in the near future.

The Cotton Enterprise

General Description of the Sample of Cotton Farms

Cotton farms ranged in size from 126 acres to 440 acres. The reported acreage included rented cotton acreage on three of the six farms.

All of the farms were free of real estate debt. Only one farm operator had obtained a short-term loan during the year, and it amounted to only $700.

Table 21 presents a general summary of the farms in the sample. Returns above out-of-pocket costs plus depreciation ranged from $1,540 to $5,481. On a per acre basis, net returns ranged from $5.45 to $16.16.

Economic Evaluation of the Sample of Cotton Farms

An average of 69 percent of the gross income of the sample farmers was obtained from the cotton enterprise. Additional income was re-

TABLE 21.—General Summary Table, Six Cotton Farms, North Central Louisiana, 1958-59

Farms	Net returns to labor and investment, per farm	Net returns to labor and investment, per acre	Acres in farm	Total investment
	(Dollars)	(Dollars)	(Acres)	(Dollars)
One	5,481	12.46	440	66,205
Two	4,444	16.16	275	35,021
Three	2,664	9.48	281	31,812
Four	1,745	5.45	320	37,024
Five	1,731	13.74	126	9,998
Six	1,540	10.69	144	19,070
Average, all farms	2,934	11.33	264	33,188

ceived from beef, hogs, corn, timber, and truck crops. Four of the farmers also received income from oil leases and off-farm work.

Although the cotton enterprise represented the major source of income on the sample farms, it utilized only a small part of the total farm acreage. Actually, the sample farms had an average of approximately 3.2 acres of land not suitable for row crop production for every acre of land that could be planted to row crops.[3]

The basic weaknesses found in the land use program of the sample farmers may be listed as follows:

1. On many of the farms, land that had been taken out of cotton production because of government restrictions remained idle. This land could have been used for corn, beef, or hay production.
2. Much of the land unfit for crop production was not being used efficiently. Returns on all of the farms could have been increased through pasture, hay, and timber use.
3. The timbered land on three of the sample farms had been completely cutover and remained idle. This land could be productive if cleared for pasture or reforested.

A Hypothetical Model Cotton Farm Returning $3,000 To Labor and Investment

Since government restrictions limit the acreage that can be used for the production of cotton, it is unrealistic to attempt to contrast extensive and intensive methods of operation as was done in the analysis of the two previous enterprises.

The analysis of the sample cotton farms revealed that for each acre of cotton land there were approximately 1.96 acres of land suitable for row crops, 2.80 acres suitable for pasture, 2.96 acres in timber and 0.48 acre in wasteland and homestead area. Thus, the clue to maximum

[3]More detailed information concerning cotton farming can be found in D.A.E. Circular 297, Department of Agricultural Economics, Louisiana State University, February 1962.

returns from the farm unit is to make efficient use of this non-cotton acreage.

Selection of Enterprises for Model Cotton Farm A — Since the size of the model farm depends on the number of acres of land available for the production of cotton, the first major assumption in designing the model farm unit was to have an average 23-acre cotton allotment in keeping with the observed average on sample farms. Using this basic acreage and applying the ratio of other land to cotton, Model Farm A will consist of approximately 188 acres, as follows:

Land suitable for row crops	45 acres
Land suitable for pasture or timber	64 acres
Land in timber	68 acres
Wasteland, homestead, etc.	11 acres
Total farm size	188 acres

Two of the enterprises were predetermined, i.e., 23 acres of cotton and 68 acres of timber. The major problem was to decide on a use for the 22 acres of fertile land suitable for row crop production and the 64 acres of relatively hilly and infertile land. Selection of enterprises to use this available land was confined to those enterprises found on the sample farms. It is reasonable to assume that in the past other supplementary enterprises have been considered and rejected for any one of several reasons, possibly lack of market outlets, excessive capital requirements, or labor needs.

The supplementary enterprises established on the six sample farms were corn, beef, hogs, and truck crops. Analysis of the truck crop enterprise revealed three major characteristics. First, it required extremely large amounts of labor. Second, it conflicted with the cotton enterprise in its needs for labor and, third, its market outlets were limited to local demand. The hog enterprise required better equipment and more farmer proficiency in the enterprise than was found on the sample farms.

The corn enterprise displayed a fairly consistent profit on all the sample farms. In addition, corn is a versatile product, as it can be readily stored or marketed through livestock.

The beef or timber enterprise would provide the best returns per acre from the relatively hilly, infertile land and would always have a fairly reliable market outlet. However, if a charge is not made for the farmer's labor, the beef enterprise supplemented by row crop residue and woodland pasture would bring higher returns on a per acre basis than the timber enterprise.

Inputs for Cotton Farm Models — The beef herd was assumed to consist of the same type animals as found on Model Beef Farm A with similar values applied.

Investment in barns, farm equipment, depreciation and miscellaneous charges were based on sample farms having the same enterprises as the beef farm models.

Cotton Enterprise — The fertilizer and yield data used were ob-

tained from the North Louisiana Hill Farm Experiment Station. Results of a five-year experiment at this station indicate that with an application of 500 pounds of 8-8-8, approximately 1,010 pounds of seed cotton can be obtained per acre.[4] All other data were obtained from the farm records of the six sample farms. Appendix Table 31 presents a summary of the estimated annual costs and returns per acre for cotton.

Corn Enterprise — The corn yield per acre is assumed to be 43 bushels and the price received $1.10 per bushel. Prices, yields, and fertilizer applications are based on data obtained from the sample cotton farms. Appendix Table 32 presents a summary of the estimated annual costs and returns per acre of corn.

Beef Enterprise — Pasture requirements are the same as those of Model Beef Farm A. That is, approximately 1.5 acres of unimproved pasture and 0.6 acre of improved pasture are assumed to maintain each brood cow. The costs per acre are the same as those of the beef farmers, with the exception that fencing charges are removed. Fencing charges on the cotton farms are included as part of miscellaneous costs.

The winter ration of the herd consists of high protein Coastal Bermuda grass hay. However, it is assumed that the animals will obtain approximately 25 percent of their roughage requirements from crop residue and woodland pasture. Thus, only 1,875 pounds of Coastal Bermuda grass hay is needed per head. Approximately 0.2 acre of Coastal Bermuda grass hay meadow is needed to produce the required hay per head. Appendix Table 13 presents the estimated cost per acre of Coastal Bermuda grass hay. However, since the total amount of hay needed is small, it is assumed that the hay will be custom baled. Estimated total cost to produce and custom harvest an acre of Coastal Bermuda grass hay is $96.44.

On the basis of acreage requirements per cow, the 64 acres of open land are divided into 46 acres of unimproved pasture, 18 acres of improved pasture, and 4 acres of hay meadow.

The costs and returns per head to be expected from the beef cattle enterprise are presented in Appendix Table 33. The type of brood cow, calving system, marketing weights of calves, and prices received are based on practices carried out by the sample of above-average beef cattle farmers.

Timber Enterprise — The timbered land is assumed to be the same as the representative woodlot selected and cruised by the North Louisiana Hill Farm Experiment Station forester. This woodlot produced approximately 130 board feet of sawlogs and 0.6 cord of pulpwood per acre annually.

Labor Inputs — Labor is not a limiting factor in the operation of model cotton farms. Available labor exceeds labor needs for all but two months of the year (Appendix Tables 34 and 35).

Costs and Returns — Capital investment required for Cotton Farms

[4]North Louisiana Hill Farm Experiment Station, *1955 Annual Progress Report* (Homer: Louisiana Agricultural Experiment Station), p. 16.

A and B is given in Table 22. As with the sample cotton farms, the major investment items are land and equipment. However, a larger

TABLE 22.—Estimated Investment Required for the Operation of Cotton Farms A and B, North Central Louisiana

	Farm A		Farm B	
	Number	Value	Number	Value
Livestock				
Brood cows @ $150	26	$ 3,900	41	$ 6,150
Heifers @ $ 75	3	225	4	300
Bulls @ $500	1	500	1	500
Total livestock		$ 4,625		$ 6,950
Barns		$ 3,500		$ 3,500
Land				
Open land (acres) @ $108	109	$11,772	167	$18,036
Timberland, homestead, etc. (acres) @ 60	79	4,740	121	7,260
Total land		$16,512		$25,296
Farm equipment		4,571		4,571
Total capital investment		$29,208		$40,317

TABLE 23.—Estimated Costs and Returns of Cotton Farm A, North Central Louisiana, (1958-59 Prices)

Gross returns		
Cotton lint	10,212 lbs. @ $0.304	$3,104
Cotton seed	6.9 tons @ $46.71	322
Calves	20 (428 lbs.) @ $0.22	1,883
Cull cows	2 (800 lbs.) @ $0.14	224
Corn	774 bushels @ $1.10	851
Timber	68 acres @ $6.75	459
Total gross returns		$6,843
Costs		
Cotton	23 acres @ $77.39	$1,780
Corn	18 acres @ $23.89	430
Improved pasture	18 acres @ $7.16	129
Unimproved pasture	46 acres @ $ 1.21	56
Hay meadow	4 acres @ $96.44	386
Veterinary fees and medicine	$1.13 per animal unit (x 30)	34
Spray materials and worming	0.43 per animal unit (x 30)	13
Salt and minerals	0.22 per animal unit (x 30)	7
Marketing	4% of gross sales of animals	84
Miscellaneous	farm unit	385
Depreciation	farm unit	410
Taxes	$0.23 an acre (x 188)	43
Total cash plus depreciation costs		$3,757
Net returns to labor and investment		$3,086
Net returns per acre		$ 16
Interest on investment (4% of $29,208)		$1,168
Net returns to labor		$1,918

TABLE 24.—Estimated Costs and Returns of Cotton Farm B, North Central Louisiana, (1958-59)

Gross returns		
Cotton lint	15,540 lbs. @ $0.304	$ 4,724
Cotton seed	10.5 tons @ $46.71	490
Calves	33 (428 lbs.) @ $0.22	3,107
Cull cows	3 (800 lbs.) @ $0.14	336
Corn	1161 bushels @ $1.10	1,277
Timber	104 acres @ $6.75	702
Total gross returns		$10,636
Costs		
Cotton	35 acres @ $77.39	$ 2,709
Corn	27 acres @ $23.89	645
Improved pasture	28 acres @ $ 7.16	200
Unimproved pasture	70 acres @ $ 1.21	85
Hay meadow	7 acres @ $96.44	675
Veterinary fees and medicine	$1.13 per animal unit (x 46)	52
Spray materials and worming	0.43 per animal unit (x 46)	20
Salt and minerals	0.22 per animal unit (x 46)	10
Marketing	4% of gross sales of animals	137
Miscellaneous costs	farm unit	424
Depreciation	farm unit	490
Taxes	$0.23 per acre (x 288 acres)	66
Total cash plus depreciation costs		$ 5,513
Net returns to labor and investment		$ 5,123
Net returns per acre		$ 17.79
Interest on investment (4% of $40,317)		$ 1,613
Net returns to labor		$ 3,510

investment in livestock was assumed for the models than was actually found on the sample cotton farms. The increased investment in livestock is due to the higher grade animals on the model cotton farms. The market for the type of calves produced by the sample farmers is limited in most cases to local slaughter demand. The better quality calves produced on the model farm meet not only local slaughter requirements but also feeder-buyer requirements, thus widening the market outlet.

Tables 23 and 24 present summaries of the costs and returns of the model farms. On Farm A, cotton accounts for 45 percent of the total costs and 50 percent of the gross returns. On Farm B, the corresponding figures are 49 and 40 percent.

Hypothetical Model Cotton Farm Returning $5,000 To Labor and Investment

Cotton Farm B, designed to return $5,000 to operator labor and investment, differs from Farm A only by the size of the cotton allotment. It is assumed that Cotton Farm B has a 35-acre cotton allotment. Using this basic acreage and applying the ratio of other land to cotton land, Farm B consists of 288 acres as follows:

Cotton	35 acres
Corn	27 acres
For beef cattle	105 acres
For timber	104 acres
Wasteland and homestead	17 acres
Total farm size	288 acres

Summary Comments

The major difference between the cotton farm models and the sample of six cotton farms is more intensive utilization of the land area. The enterprises are basically the same. Assumed yields in some cases are less, but every available acre capable of providing income is in production. Apparently the major problem of the cotton farmers is their failure to adjust the farm unit to the reduced cotton acreage. As a result, much of the land area remains idle.

The major conclusion that can be drawn from the survey data is that the cotton enterprise, when supplemented with suitable alternative enterprises, is still profitable in the North Central Louisiana area.

The data obtained from the sample farms indicate that, to maintain a profitable farm operation, a relatively large farm is needed. The model farms substantiate this. In addition to obtaining sufficient acreage, there is the problem of obtaining a cotton allotment. The United States Department of Agriculture Commodity Stabilization Service reports a 26 percent decrease in acreage covered by cotton allotments in the hill farm area from 1959 to 1960.[5]

Apparently cotton acreage restrictions will continue for some time to come, and the opportunity to develop new cotton farms in the North Central Louisiana area is very limited.

The General or Diversified Farm Unit

Description of General Farms in the Sample

Table 25 contains summary data for the six farms comprising the sample for this part of the study.

Only one farm was mortgaged and the mortgage was held by the father of the operator. Another operator had obtained a $1,000 short-term loan from the local bank.

Economic Evaluation of the Sample of General Farms

The type of enterprises found on the general farms depended on the number of acres suitable for row crop production and whether or not the farm had a cotton allotment. In general, the more acres available for row crop production, the more varied are the enterprises. Table

[5]United States Department of Agriculture Commodity Stabilization Service, *Louisiana Report of Programs Administered by State and Parish ASC Committees* (Alexandria, 1958-59 and 1959-60, Section 3, Table 1).

26 shows the total acreage and the number of acres suitable for row crop production for each farm. These data also show that, on the average, for every acre suitable for row crop use, there are 4.2 acres that are not suitable.

Table 27 reports the percentage of gross income derived from the various enterprises on the six general farms. Beef and hog enterprises were found on all sample farms. Other enterprises included timber, cotton, truck crops, corn, broilers, sheep, and harvested seed crops.

The principal criticism about the sample general farms is that available acreage was not utilized efficiently. Most farm operators concentrated on row crops and, in most cases, were receiving adequate returns

TABLE 25.—Summary Table of the Six General Farms, North Central Louisiana, 1958-59

Farms	Net returns to labor and investment, per farm	Net returns to labor and investment, per acre	Farm size	Total investment
	(Dollars)	(Dollars)	(Acres)	(Dollars)
One	2,631	6.36	414	61,125
Two	2,169	20.86	104	26,909
Three	2,048	2.38	860	123,581
Four	1,317	4.24	310	33,460
Five	1,064	5.85	182	26,792
Six	599	2.16	276	31,446
Average (all farms)	1,638	6.98	358	50,552

TABLE 26.—Total Farm Acreage, Acreage Suitable for Row Crop Production, and Land Use Pattern, Six General Farms, North Central Louisiana, 1958-59

Item	Farms					
	One	Two	Three	Four	Five	Six
	(Acres)					
Total farm land	414	104	860	310	182	276
Acres suitable for row crop production	139	24	209	36	52	56
Land use pattern						
Beef	151	54	208	84	44	79
Hog	33	4	25	Lot	36	14
Sheep	..	..	..	..	..	75
Cotton	27	..	70	..	..	1
Truck crops		..	..	2	9	14
Corn	26	9	15	..	..	..
Harvested seed crops	39	..	25	..	..	..
Timber	126	33	406	210	85	76
Idle	..	..	64	..	..	..
Homestead, waste, etc.	12	4	47	14	8	17

TABLE 27.—Percent of Gross Returns Received from Various Farm Enterprises, Six General Farms, North Central Louisiana, 1958-59

Enterprise	Farms					
	One	Two	Three	Four	Five	Six
	(Percent)					
Beef	20	9	29	29	33	37
Hog	8	38	5	10	35	13
Timber	3	1	13	31	..	..
Cotton	17	..	45	..	..	5
Truck crops	..	..	..	1	28	32
Corn	10	2	4	5	..	..
Broiler	34	33	..	..	..	..
Sheep		..	..	..	..	13
Harvested seed crops*	5		4	..	..	..
Other income**	3	17	..	24	4	..
Total	100	100	100	100	100	100

*Includes oats, crimson clover, and wheat.
**Includes income from oil leases and off-farm work.

from this acreage, but the acreage not suitable for row crop enterprises was usually neglected.[6]

Hypothetical Model General Farm Yielding $3,000 To Labor and Investment

Only one diversified farm unit, General Farm A, was designed to return $3,000 to operator labor and investment because the yields obtained by the sample farmers were as high as those obtained at the experiment stations. The only exception was the beef cattle enterprise, which was handled by a synthesis of both sample farm and recommended experiment station practices.

Selection of Enterprises — Table 28 shows net per acre returns above

[6]More detailed information concerning the organization and operation of general farms can be found in D.A.E. Circular 298, Department of Agricultural Economics, Louisiana State University, Baton Rouge, Louisiana, March 1962.

TABLE 28.—Estimated Returns per Acre Above Out-of-Pocket Costs, Selected Farm Enterprises in the Louisiana Hill Farm Area, 1960

Farm enterprise	Net returns per acre
Cotton	$71.60
Hog	33.91*
Corn	23.41
Beef	21.23**
Timber (planted pine plantation)	9.58***
Timber (mixed all age farm woodlot)	6.75****

*Based on data presented in Appendix Table 36.
**Based on herd obtaining part of winter feed requirements from field residue and woodland grazing.
***Source: F. L. Corty and J. J. Stevens, *Pine Planting and Profits* (Bulletin No. 525, Baton Rouge: Louisiana Agricultural Experiment Station, June 1959), Table 4, p. 11. Returns based on a 40-year rotation.
****Based on yield obtained from a representative farm woodlot selected and cruised by the North Louisiana Hill Farm Experiment Station forester.

cash costs from the most practical enterprises in the North Louisiana Hill Farm area. Truck crops were not included because of limited market outlets. Wheat, oats, and crimson clover were not considered because the enterprises would be competitive with beef for land area, and the beef enterprise provides higher net returns per acre.

The contract broiler enterprise found on one sample farm displayed relatively high returns. Nevertheless, the contract broiler enterprise was not included in the model because returns to the enterprise require a relatively large investment in specialized equipment, and returns to the enterprise are entirely dependent upon the decisions of someone other than the farmer. The farmer could never be sure that his contract would be renewed. This enterprise conducted on an independent basis has not been very profitable. Likewise, the cotton enterprise was not included in the General Farm Model A because it was found that most low income farmers in the hill area did not have sufficient cotton acreage to economically justify cotton production. It is included, however, in General Farm Model B.

Inputs for Model Diversified Farms A and B — In designing the model diversified general farms, input-output data were obtained from the sample general farms, cotton farms, beef cattle farms, and experiment station publications. Inputs and outputs for each of the supplementary enterprises are discussed separately.

Hog and Corn Enterprise — It is assumed that Diversified Farm A would have a hog enterprise consisting of ten brood sows. Approximately 5 acres of pasture and 32 acres of corn are required for an operation of this size. Appendix Table 36 presents the estimated costs and returns for the hog enterprise. Corn is fed to the hogs as long as hog prices remain above $14 per hundredweight. If hog prices fall below $14 per hundredweight and corn prices remain at $1.10 per bushel, corn is sold.

An additional 17 acres of corn is produced for sale on Farm A and 35 additional acres on Farm B. This corn will also serve as a source of feed for beef cattle and hogs in case of low crop yields or pasture failure. Appendix Table 32 presents the estimated costs and returns from the corn enterprise.

Beef Cattle Enterprise — The beef cattle enterprise of Diversified Farm A is carried out in the same manner as the beef cattle enterprise of Model Cotton Farm A. Appendix Tables 37 and 38 present the estimated costs and returns for the beef enterprise.

Cotton Enterprise — Cotton production data were obtained from the farm records of the sample farms. Appendix Table 31 presents a summary of the estimated annual costs and returns per acre for cotton.

Timber Enterprise — Timber acreage on Diversified Farm A includes 30 acres of even-aged loblolly pine, managed on a 40-year rotation, plus 58 acres of mixed stand woodlot. On Farm B the corresponding acreages are 60 and 71, respectively.

Labor Inputs — Labor requirement is not a serious problem on the

model diversified farms. Actually, the major problem is to find some alternative use for excess labor (Appendix Tables 39 and 40). Additional labor is generally needed one month out of the year, for corn and cotton harvest.

Hypothetical Model Diversified Farm Returning $5,000 To Labor and Investment

Diversified Farm B was designed to return approximately $5,000 to operator labor and investment. Farm B has the same basic enterprises as Farm A, plus a cotton enterprise. Cotton was added because most of the larger general farms in the hill farm area have a cotton allotment. The average-size cotton allotment for all farms in the hill farm area of North Central Louisiana was eight acres at the time of this study.[7]

The investment required for the two diversified farm models is given in Table 29 and a summary of the costs and returns is given in Tables 30 and 31, respectively.

The two diversified farm plans discussed in this section represent a synthesis of the most profitable enterprises that exist in the North Central Louisiana area, based on 1958-59 prices. The major difference between the model farms and the sample farms is the more complete

[7]United States Department of Agriculture Commodity Stabilization Service, *op. cit.*, Section III, Table 1.

TABLE 29.—Estimated Investment Required for the Operation of General Farm Models, North Central Louisiana, 1958-59 Prices

		Farm A		Farm B	
		Number	Value	Number	Value
Livestock					
Brood cows	@ $150	27	$ 4,050	41	$ 6,150
Heifers	@ $150	3	450	5	375
Bulls	@ $500	1	500	1	500
Boars	@ $150	1	150	1	150
Sows	@ $ 62.50	10	625	10	625
Total livestock			$ 5,775		$ 7,800
Barns			$ 2,275		$ 2,275
Farrowing pen			425		425
Total buildings			$ 2,700		$ 2,700
Land					
Open (acres)	@ $111	124	$13,764	197	$21,867
Woodland, homestead, etc. (acres)	@ $ 69	100	$ 6,900	136	$ 9,384
Total land			$20,664		$31,251
Farm equipment			$ 3,298		$ 3,298
Hog equipment			$ 205		$ 205
Total capital investment			$32,642		$45,254

TABLE 30.—Estimated Costs and Returns of General Farm A, North Central Louisiana, (1958-59 Prices)

Gross returns		
Calves	89.9 cwt. @ $22	$1,978
Cull cows	16.0 cwt. @ $14	224
Hogs	160.0 cwt. @ $18	2,880
Corn	731 bushels @ $1.10	804
Timber	58 acres @ $6.75	392
	30 acres @ $9.58	287
Total returns		$6,565
Costs		
Corn	17 acres @ $23.89	$ 406
Beef	*	716
Hogs	**	1,625
Miscellaneous costs	farm unit	332
Depreciation	farm unit	389
Taxes	15c per acre (224 acres)	34
Total cash plus depreciation costs		$3,502
Net returns to labor and investment		$3,063
Net returns per acre		$13.67
Interest on investment (4 percent of $32,642)		$1,306
Net returns to labor		$1,757

*See Appendix Table 37 for details.
**See Appendix Table 36 for details.

TABLE 31.—Estimated Costs and Returns of General Farm B, North Central Louisiana, (1958-59 Prices)

Gross returns		
Calves	137.0 cwt. @ $22	$ 3,014
Cows	24.0 cwt. @ $14	336
Hogs	160 cwt. @ $18	2,880
Cotton lint	3,552 lbs. @ $0.304	1,080
Cottonseed	2.4 tons @ $46.71	112
Corn	1,505 bushels @ $1.10	1,656
Timber	60 acres planted pine @ $9.58	575
	71 acres all age mixed forest @ $6.75	479
Total gross returns		$10,037
Costs		
Cotton	8 acres @ $77.39	619
Corn	35 acres @ $23.89	836
Beef	*	1,072
Hogs	**	1,625
Miscellaneous costs	farm unit	413
Taxes	$0.15 per acre (333 acres)	50
Total cash costs plus depreciation		$5,004
Net returns to labor and investment		$5,033
Net returns per acre		$ 15
Interest on investment (4 percent of $45,254))		$1,810
Net returns above interest on investment		$3,223

*See Appendix Table 37 for details.
**See Appendix Table 36 for details.

utilization of every acre of land on the model farms. It is again emphasized that, for profitable farming in the hill farm area of North Central Louisiana, every available acre must be utilized in a more efficient manner.

The one major advantage of the diversified farm unit over the other types discussed in this study is that a drastic decrease in the price of one product would not lower income to as great an extent as on those farms specializing in one disadvantaged enterprise. A complete cotton crop failure, for example, would reduce income on General Farm B by 11 percent and on Cotton Farm B by 51 percent.

Summary

From 1954 to 1959, the total number of farms in the hill farm area decreased by 43 percent. Farmers, businessmen, and potential landowners want to know what resources are necessary for successful farming in an area that is rapidly losing many of its farms.

The general purpose of this study was to determine what allocation of resources, or better proportioning of factors of production, is needed to have profitable open land farming in the hill farm areas of Louisiana. Specifically, this study tried to determine what combination of resources would be necessary to provide the hill farmer a return of $3,000, or $5,000, for his labor and investment in four major farm types, i.e., beef, dairy, cotton, and general farming.

The analysis was based on data collected from 24 better-than-average resident farmers who obtained not less than 75 percent of gross income from the farm unit.

Beef

Analysis of the sample beef cattle farms showed that many beef enterprises survived because they were not burdened by real estate debt. Both the sample farms and the model farms indicated that large acreages are needed to obtain an adequate income from a specialized beef cattle operation. Sample farms averaged 440 acres. The model farm at the $3,000 income level, using intensive practices, required slightly more than 230 acres and fixed capital investment in excess of $60,000; and at the $5,000 income level, required more than 365 acres and fixed capital investment in excess of $90,000.

Dairy

The dairy enterprise is a relatively profitable enterprise at prevailing prices. Analysis showed, however, that farms in the survey sample were conducting dairy operations in an extensive manner. Comparison of the extensive model dairy farms with the intensive models indicated that the dairy enterprise is well adapted to intensive operation. The extensive models require more land, capital, and labor to obtain the same level of income as the intensive model. The extensive model at the

$3,000 income level required 78 acres of land and a fixed capital investment of $26,952, while at the $5,000 income level, 119 acres of land and a fixed capital investment of $34,356 were needed. The intensive model at the $3,000 income level required only 46 acres of land and a capital investment of $25,345, but to obtain $5,000 required 74 acres of land and a fixed capital investment of $31,776.

Although the analysis indicates that an adequate return on investment can be obtained, even when a charge is made for operator's labor, entry into the dairy enterprise in this area is subject to state and federal regulation. Even more stringent limitations to the entry of new producers are expected in the near future.

Cotton

Analysis of the cotton farms showed that the cotton enterprise supplemented by other enterprises is still profitable at current support prices. Most farmers in the survey sample, however, had not adjusted the farm unit to the reduction in cotton acreage, and much of the land area was not being efficiently utilized.

The model cotton farm designed to return $3,000 to operator labor and investment required 188 acres of land and a fixed capital investment of $29,208. The farm model designed to return $5,000 to operator labor and investment required 288 acres and a capital investment of $40,317. Acreage restrictions, however, limit the entry of new cotton farmers.

General or Diversified Farms

Analysis of the general farms revealed that the enterprises yielding the largest returns per acre, in order of importance, were: cotton, hogs, corn, beef, and timber. Apparently, farmers placed too much emphasis on the cotton and corn enterprises and not enough emphasis on hog, beef, and timber enterprises.

Net returns per acre were highest for the dairy enterprise, followed by cotton, general farms, and beef. Of the four major farm types considered here, beef and general farming are the only ones not hampered by state and federal restraints against entry.

Conclusions

Data presented in this study indicate that the principal factors contributing to the success of the sample farms were (1) good managerial ability and (2) the debt-free ownership of a large land area.

The need for a large land area is primarily due to the topography and fertility level of the soil. For each acre of crop land suitable for intensive farming there are approximately 4 acres of land suitable only for pasture, timber, or other extensive use.

Census data indicate that more than 60 percent of the farms in the area are less than 100 acres in size (Table 32). The many small farm

TABLE 32.—Farms by Size, North Central Louisiana, 1959

Farm size	Number of farms	Percent of farms	Accumulative total
			(Percent)
Under 10 acres	436	7.5	7
10 to 49 acres	1,850	31.1	38
50 to 99 acres	1,352	22.6	61
100 to 179 acres	1,202	20.1	81
180 to 259 acres	424	7.1	88
260 to 499 acres	402	6.7	95
500 acres and over	294	4.9	100
Total	5,960	100.0	

Source: United States Bureau of the Census, *Census of Agriculture - Preliminary Series AC 59-1* (Washington, D. C.: United States Government Printing Office, December 1960), p. 1.

units must be consolidated if open land farming is to continue. Consolidation, however, is not easy. It is estimated that less than 25 percent of the land area still remains open. Much of this land consists of small tracts isolated by large forested areas. Another obstacle to consolidation is the speculative high land values which exceed the value justified by the agricultural productivity of the land.

Although open land farming has been considerably curtailed in the North Central Louisiana area, the many dairy farms in existence can operate profitably as long as milk prices retain their present relationship to costs. On the same basis, farms with large cotton allotments will continue to be successful. Large general farms offer the best possibilities for continued successful farming in the area. Diversified farm units can withstand economic adversity much better than farm units with a single enterprise. Many small, isolated farm units will become idle, or revert to timber. Others must be consolidated into economical units as indicated by the hypothetical models presented in this report.

APPENDIX TABLES

APPENDIX TABLE 1.—Annual Cost of Purchased Feeds and Home-grown Feeds per Pound of Available T.D.N., Six Beef Cattle Farms, North Central Louisiana, 1958-59*

Feed	Farms					
	One	Two	Three	Four	Five	Six
	(Dollars per pound)					
Purchased feeds						
Cottonseed meal	. 05	. 05	..	. 05	. 05	. 05
Corn	..	..	..	.018	.	..
Hay	..	..	..	.025	.030	..
Home-grown feeds						
Corn		.010	.009	.009	.009	.021
Oat hay**	.005	.006	.	.008	.	..
Grass hay	.003	.006	.012	.008	.010	.010

*Does not include cost of operator or family labor.
**The cost of producing oat hay includes the farmers' estimate of harvesting cost and the cost of the final application of nitrogen.

APPENDIX TABLE 2.—Pounds of Digestible Protein Available per Head in the Winter Ration from Feeds Other Than Cottonseed Meal, Six Beef Cattle Farms, North Central Louisiana, 1958-59*

Item	Farms					
	One	Two	Three	Four	Five	Six
	(Pounds)					
Corn, cob, and shuck meal	..	28	40	133	72	76
Grass hay	68	52	73	27	39	40
Oat hay	94	105	..	70	..	..
Total	162	185	113	230	111	116

*The National Research Council recommends 97.6 pounds of digestible protein for a 1,000-pound wintering pregnant cow.

APPENDIX TABLE 3.—Annual Miscellaneous Costs, Six Beef Cattle Farms, North Central Louisiana, 1958-59

Item	Farms					
	One	Two	Three	Four	Five	Six
	(Dollars)					
Veterinary fees and medicine	57	29	113	64	56	51
Spray materials	6	24	47	37	15	6
Truck and auto expense	501	433	735	390	311	97
Repairs to farm equipment	81	94	240	170	48	38
Breeding fees	..	18	..	..	..	20
Hauling charges	7	..	17	60	..	..
Other*	33	22	44	35	..	..
Total	685	620	1,196	756	489	239

*Includes telephone, electricity, feed grinding, registration of livestock, salt, minerals, and extra fuel oil and grease.

APPENDIX TABLE 4.—Fertilizer Application and Yield from Corn Acreage, Four Beef Cattle Farms, North Central Louisiana, 1958-59

Farms*	Fertilizer	Pounds	Yield per acre (bushels)
Two	N	79	
	P	48	50
	K	48	
Four	N	66	
	P	24	38
	K	24	
Five	N	79	
	P	20	40
	K	20	
Six	N	41	
	P	24	45
	K	24	
Average all four farms	N	66	
	P	29	43
	K	29	

*Corn yields on Farms One and Three were above average, because of previous applications of chicken manure.

APPENDIX TABLE 5.—Fertilizer Application and Yield from Hay Meadows, Four Beef Cattle Farms, North Central Louisiana, 1958-59

Farms*	Fertilizer	Pounds	Yield per acre (tons)
Three	N	51	
	P	36	1.4
Four	N	67	
	P	0	1.7
	K	0	
Five	N	32	
	P	18	1.8
	K	18	
Six	N	50	
	P	53	2.0
	K	53	
Average all four farms	N	50	
	P	27	1.7
	K	27	

*The hay yields on Farms One and Two were above those of the other farms, because of the proximity of the hay meadows to creek bottoms.

APPENDIX TABLE 6.—Estimated Annual Cost of Producing Corn, Extensive Type of Farm, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Cost per acre
		(Dollars)	
Seed (pounds)	7	0.21	1.47
Fertilizer			
N (pounds)	66	0.12	7.92
P (pounds)	29	0.09	2.61
K (pounds)	29	0.07	2.03
Labor			
Operator* (hrs.)	8.0	..	..
Hired** (hrs.)	8.0	0.50	4.00
Tractor (hrs.)	8.0	0.59	4.72
Total cost			22.75

*No charge is made for the operator's labor.
**Labor is hired to harvest the crops.

APPENDIX TABLE 7.—Estimated Cost to Establish Common Bermuda Pasture Mixture, Extensive Farm Plan, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Cost per acre
		(Dollars)	(Dollars)
Seed			
Kobe lespedeza (pounds)	25	0.24	6.00
Crimson clover (pounds)	12	0.30	3.60
Fertilizer			
N (pounds)	16	0.12	1.92
P (pounds)	16	0.09	1.44
K (pounds)	16	0.07	1.12
Lime (tons)	1	6.50	6.50
Labor			
Operator* (hrs.)	1.6	..	..
Tractor (hrs.)	1.6	0.59	0.94
Total cost**			21.52

*No charge is made for operator's labor.
**Under the cost-share arrangement $11.00 of the total cost will be paid by the Agricultural Conservation Program.

APPENDIX TABLE 8.—Estimated Annual Cost per Acre of Maintaining a Common Bermuda Pasture Mixture, Extensive Type of Farm, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Cost per acre
			(Dollars)
Fertilizer			
N (pounds)	16	0.12	1.92
P (pounds)	16	0.09	1.44
K (pounds)	16	0.07	1.12
Labor			
Operator* (hrs.)	0.5	..	
Tractor (hrs.)	0.5	0.59	0.30
Clipping**			0.28
Fencing***			0.34
Prorated costs****			2.10
Total annual costs			7.50

*No charge is made for operator's labor.
**Clipping charge is an average of clipping costs of Six Beef Cattle Farms.
***Fencing charge is an average of fencing costs of Six Beef Cattle Farms.
****Prorated charge is the establishment cost prorated over five years.

APPENDIX TABLE 9.—Estimated Annual Cost of Maintaining an Acre of Unimproved Pasture and Woodland Pasture, Extensive Farm Plan, North Central Louisiana, (1958-59 Prices)

Pasture	Cost per acre
	(Dollars)
Unimproved pasture	
Clipping*	0.28
Fencing**	0.34
Prorated cost ***	0.93
Total	1.55
Woodland pasture	
Fencing**	0.34

*Clipping charge is an average of clipping costs of Six Beef Cattle Farms.
**Fencing charge is an average of fencing costs of Six Beef Cattle Farms.
***Prorated charge is cost of applying one ton of lime prorated over seven years.

APPENDIX TABLE 10.—Estimated Annual Cost per Acre of Producing Common Bermuda Hay, Extensive Type of Farm, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Cost per acre
			(Dollars)
Fertilizer			
N (pounds)	50	0.12	6.00
P (pounds)	27	0.09	2.43
K (pounds)	27	0.07	1.89
Labor			
Operator* (hrs.)	2.6		
Hired** (hrs.)	3.7	0.50	1.85
Tractor and baler (hours)	3.4	0.59	2.01
Twine			1.80
Total cost			15.99

*No charge is made for the operator's labor.
**Labor is hired for the hay harvesting operation.

APPENDIX TABLE 11.—Total Hours of Labor Used Monthly, Farm A, North Central Louisiana (Extensive Plan)

Months	Feeding	Feed crops and pasture	Other*	Total
		(Hours)		
January	42	..	5.2	47.2
February	42			42.0
March	...	94.6	18.4	113.0
April	...	65.4	..	65.4
May	...	.	6.1	6.1
June	...	430.0	6.1	436.1
July	...	...	89.9	89.9
August	...	...	89.9	89.9
September	...	137.6	...	137.6
October	.	...	65.4	65.4
November	42	...	...	42.0
December	42	...	...	42.0
Total	168	727.6	281.0	1,176.6

*"Other" consists of labor for castrating, spraying, worming, vaccination, pasture clipping, and fence upkeep.

APPENDIX TABLE 12.—Estimated Annual Cost per Acre of Maintaining a Coastal Bermuda Pasture Mixture, Intensive Farm Plan, North Central Louisiana, (1958-1959 Prices)

Item	Amount	Cost per unit	Cost per acre
			(Dollars)
Ryegrass (pounds)	10	0.11	1.10
Ammonium nitrate (pounds)	400	4.10	16.40
0-14-14 (pounds)	500	2.10	10.50
Labor			
Operator* (hrs.)	2.6	..	..
Tractor (hrs.)	1.7	0.59	1.00
Fencing**			0.34
Clipping***			0.28
Prorated costs****			5.59
Total cost			35.21

*No charge is made for operator's labor.
**Fencing charge is an average of fencing costs of Six Beef Cattle Farms.
***Clipping charge is an average of clipping costs of Six Beef Cattle Farms.
****Prorated charge is the establishment cost prorated over five years.

APPENDIX TABLE 13.—Estimated Annual Cost per Acre of Producing Coastal Bermuda Hay, Intensive Farm Plan, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Cost per acre
			(Dollars)
Fertilizer			
N (pounds)	400	0.12	48.00
P (pounds)	100	0.09	9.00
K (pounds)	100	0.07	7.00
Labor			
Operator* (hrs.)	6.5		
Hired** (hrs.)	11.5	0.50	5.75
Tractor (hrs.)	8.6	0.59	5.07
Twine			8.98
Prorated costs***			5.10
Total cost			88.90

*No charge is made for the operator's labor.
**Labor is hired to load and unload hay.
***Established cost prorated over five years.

APPENDIX TABLE 14.—Estimated Annual Cost per Acre of Establishing a Coastal Bermuda Hay Meadow, Intensive Farm Plan, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Cost per acre
			(Dollars)
Lime (tons)	1	6.50	6.50
0-14-14 (pounds)	500	2.10	10.50
Coastal Bermuda sprigs (bu.)	10	.65	6.50
Ammonium nitrate (pounds)	400	4.10	16.40
Labor			
Operator* (hrs.)	9.3		
Tractor (hrs.)	4.7	0.59	2.77
Total cost**			42.60

*No charge is made for operator's labor.
**Under the cost-share arrangement $14.65 will be paid by the Agricultural Conservation Program.

APPENDIX TABLE 15.—Estimated Cost per Acre of Establishing a Coastal Bermuda Pasture Mixture, Intensive Farm Plan, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Cost per acre
			(Dollars)
Limestone (tons)	1	6.50	6.50
0-14-14 (lbs.)	500	2.10	10.50
Coastal Bermuda sprigs (bu.)	10	0.65	6.50
Ammonium nitrate (lbs.)	400	4.10	16.40
White clover (lbs.)	3	0.86	2.58
Ryegrass (lbs.)	10	0.11	1.10
Labor* (hrs.)	10.3		
Tractor (hrs.)	4.7	0.59	2.77
2, 4-D (lbs.)	0.75	1.12	0.84
Total cost**			47.19

*No charge is made for operator's labor.
**Under the cost-share arrangement $17.25 of the cost will be paid by the Agricultural Conservation Program.

APPENDIX TABLE 16.—Total Hours of Labor Used Monthly, Farm B (Intensive Type), North Central Louisiana

Months	Feeding	Feed crops and pasture	Other*	Total
		(Hours)		
January	77.1	...	12.0	89.1
February	77.1	...	...	77.1
March	...	19.7	12.0	31.7
April	...	82.0	14.5	96.5
May	...	206.6	12.0	218.6
June	...	...	91.8	91.8
July	...	288.6	12.0	300.6
August	...	.	60.2	60.2
September	...	82.0	...	82.0
October	...	190.2	...	190.2
November	77.1	...	...	77.1
December	77.1	...	...	77.1
Total	308.4	869.1	214.5	1,392.0

*"Other" consists of labor used for castrating, spraying, worming, vaccinating, pasture clipping, and fence maintenance.

APPENDIX TABLE 17.—Total Hours of Labor Used Monthly, Beef Farm C (Extensive Type), North Central Louisiana

Months	Feeding	Feed crops and pasture	Other*	Total
		(Hours)		
January	76.0	...	9.3	85.3
February	76.0	...	...	76.0
March	...	164.0	21.7	185.7
April	...	117.8	...	117.8
May	...	...	9.3	9.3
June	...	781.2	9.3	790.5
July	...	...	156.8	156.8
August	...	...	156.8	156.8
September	...	248.0	...	248.0
October	...	...	118.0	118.0
November	76.0	...	...	76.0
December	76.0	...	...	76.0
Total	304.0	1,311.0	481.2	2,096.2

*"Other" consists of labor used for castrating, spraying, worming, vaccinating, pasture clipping, and fence upkeep.

APPENDIX TABLE 18.—Total Hours of Labor Used Monthly, Beef Farm D (Intensive Type), North Central Louisiana

Months	Feeding	Feed crops and pasture	Other*	Total
		(Hours)		
January	134.8	. . .	17.0	151.8
February	134.8	.	.	134.8
March	. . .	28.5	17.0	45.5
April	. . .	142.0	22.7	164.7
May	. . .	359.1	17.0	376.1
June	. . .	.	159.0	159.0
July	. . .	501.1	17.0	518.1
August	. . .	. . .	100.8	100.8
September	. . .	142.0	. . .	142.0
October	. . .	330.6	. . .	330.6
November	134.8	. . .	. . .	134.8
December	134.8	.	. . .	134.8
Total	539.2	1,503.3	350.5	2,393.0

*"Other" consists of labor used for castrating, spraying, worming, vaccinating, pasture clipping, and fence maintenance.

APPENDIX TABLE 19.—Miscellaneous Costs, Six Dairy Farms, North Central Louisiana, 1958-59

Item	Farms					
	One	Two	Three	Four	Five	Six
			(Dollars)			
Veterinary fees and medicine	140	73	135	85	49	30
Spray materials	60	8	15	11	9	20
Truck and auto	317	91	124	294	286	319
Repairs to equipment	270	138	65	136	88	
Breeding fees	472	40	150	206	. .	268
Electricity and telephone	937	155	138	65	174	180
Supplies	200	11	. .	32	17	60
Farm insurance	346	62	24	. .	. .	
Land rent	. .	. .	100	. .	. .	62
Total	1,742	578	751	829	623	939

APPENDIX TABLE 20.—Estimated Annual Cost of Establishing and Maintaining an Acre of Oat Winter Pasture, Extensive Farm Plans, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Total cost per acre
			(Dollars)
Seed			
Oats (bushels)	3	1.56	4.68
Fertilizer			
N (pounds)	96	0.12	11.52
P (pounds)	47	0.09	4.23
K (pounds)	47	0.07	3.29
Labor*			
Operator (hours)	5.4	..	.
Hired** (hours)	5.0	0.50	2.50
Tractor and baler (hours)	6.6	0.59	3.89
Twine			1.49
Fencing			0.33
Total annual cost			31.93

*No charge is made for the operator's labor.
**Labor is hired for the hay harvesting operation.

APPENDIX TABLE 21.—Estimated Annual Cost of Establishing and Maintaining an Acre of Millet Temporary Summer Pasture, Extensive Farm Plans, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Total cost per acre
			(Dollars)
Seed			
Millet (pounds)	29	0.10	2.90
Fertilizer			
N (pounds)	63	0.12	7.56
P (pounds)	28	0.09	2.52
K (pounds)	28	0.07	1.96
Labor*			
Operator (hours)	3.6	..	..
Tractor (hours)	3.6	0.59	2.12
Fencing			0.33
Total annual cost			17.39

*No charge is made for the operator's labor.

APPENDIX TABLE 22.—Estimated Annual Cost to Establish an Acre of Common Bermuda Pasture Mixture, Extensive Farm Plans, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Total cost per acre
			(Dollars)
Seed			
Kobe lespedeza (pounds)	25	0.24	6.00
Crimson clover (pounds)	12	0.30	3.60
Fertilizer			
N (pounds)	23	0.12	2.76
P (pounds)	22	0.09	1.98
K (pounds)	22	0.07	1.54
Lime (tons)	1	6.50	6.50
Labor			
Operator* (hours)	1.6	..	
Tractor (hours)	1.6	0.59	0.94
Total cost**			23.32

*No charge is made for the operator's labor.
**Under the cost-share arrangement $11.81 of the total cost will be paid by the Agricultural Conservation Program.

APPENDIX TABLE 23.—Estimated Annual Maintenance Cost Per Acre of Common Bermuda Pasture Mixture, Extensive Farm Plans, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Total cost per acre
			(Dollars)
Fertilizer			
N (pounds)	23	0.12	2.76
P (pounds)	22	0.09	1.98
K (pounds)	22	0.07	1.54
Labor			
Operator* (hours)	.5		
Tractor (hours)	.5	0.59	0.30
Clipping**			0.39
Fencing***			0.33
Prorated cost ****			2.30
Total annual cost			9.60

*No charge is made for the operator's labor.
**Clipping charge is an average of clipping costs of five dairy farmers.
***Fencing charge is an average of fencing costs of six dairy farmers.
****Prorated charge is the establishment cost prorated over five years.

APPENDIX TABLE 24.—Estimated Annual Cost of Maintaining an Acre of Unimproved Pasture and Woodland Pasture, Extensive Farm Plans, North Central Louisiana, (1958-59 Prices)

Pasture	Total cost per acre
	(Dollars)
Unimproved pasture	
Clipping*	0.39
Fencing**	0.33
Prorated cost***	0.93
Total	1.55
Woodland pasture	
Fencing	0.33

*Clipping charge is an average of clipping costs of five dairy farms.
**Fencing charge is an average of fencing costs of six dairy farms.
***Prorated charge is cost of applying one ton of lime prorated over seven years.

APPENDIX TABLE 25.—Estimated Annual Cost of Establishing and Maintaining an Acre of Winter Temporary Pasture, Intensive Farm Plans, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Total cost per acre
			(Dollars)
Seed			
Oats (bushels)	3	1.53	4.59
Ryegrass (pounds)	10	0.11	1.10
Crimson clover (pounds)	10	0.30	3.00
Fertilizer			
N (pounds)	100	0.12	12.00
P (pounds)	48	0.09	4.32
K (pounds)	48	0.07	3.36
Labor			
Operator (hours)	4.1	..	..
Tractor (hours)	3.5	0.59	2.06
Fencing			0.33
Total planting cost			30.76
Harvesting for silage*			
Cutting (ton)	8.6	1.50	12.90
Hauling & unloading			
Tractor (hours)	5.7	0.59	3.36
Labor** (hours)	2.9	0.50	1.45
Total harvesting cost			17.71

*Adapted from C. M. Woolf, *Resource Requirements and Returns for a Family-Size Dairy Farm* (Unpublished Thesis, Baton Rouge: Louisiana State University, January 1960), p. 58.
**Assumes 2.8 hours of harvesting labor supplied by operator.

APPENDIX TABLE 26.—Estimated Annual Cost per Acre of Establishing and Maintaining a Millet Temporary Summer Pasture, Intensive Farm Plans, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Total cost per acre
		(Dollars)	
Seed			
Millet (pounds)	25	0.10	2.50
Fertilizer			
N (pounds)	100	0.12	12.00
P (pounds)	48	0.09	4.32
K (pounds)	48	0.07	3.36
Labor			
Operator (hours)	3.6	. .	. . .
Tractor (hours)	3.6	0.59	2.12
Fencing			0.33
Total planting cost			24.63
Harvesting for silage*			
Cutting (ton)	11.6	1.50	17.40
Hauling and unloading			
Tractor (hours)	7.3	0.59	4.31
Labor** (hours)	4.5	0.50	2.25
Total harvesting cost			23.96

*Adapted from C. M. Woolf, *Resource Requirements and Returns for a Family-Size Dairy Farm* (Unpublished Thesis, Baton Rouge: Louisiana State University, January 1960), p. 58.
**Assumes 2.8 hours of harvesting labor supplied by operator.

APPENDIX TABLE 27.—Monthly Labor Requirements for the Operation of Dairy Farm A, North Central Louisiana

Month	Milking*	Pasture and hay	Other**	Total
		(Hours)		
January	178.9	. . .	26.8	205.7
February	178.9	7.0	26.8	212.7
March	178.9	23.0	8.5	210.4
April	178.9	16.0	8.1	203.0
May	178.9	131.4	8.9	319.2
June	178.9	196.6	8.9	384.4
July	178.9	7.0	8.9	194.8
August	178.9	. . .	24.2	203.1
September	178.9	70.4	9.3	258.6
October	178.9	. . .	31.3	210.2
November	178.9	. . .	26.8	205.7
December	178.9	16.0	26.8	221.7
Total	2,146.8	467.4	215.3	2,829.5

*Includes all operations in the milking parlor.
**Includes fence maintenance, pasture clipping, spraying, and feeding replacement heifers and dry cows.

APPENDIX TABLE 28.—Monthly Labor Requirements for the Operation of Dairy Farm B, North Central Louisiana

Months	Milking*	Pasture, hay, and silage**	Other***	Total
		(Hours)		
January	148.8	. . .	24.3	173.1
February	148.8	14.0	24.3	187.1
March	148.8	57.6	7.8	214.2
April	148.8	. . .	32.7	181.5
May	148.8	73.8	7.1	229.7
June	148.8	51.5	7.5	207.8
July	148.8	37.3	8.2	194.3
August	148.8	35.0	7.5	191.3
September	148.8	110.8	8.1	267.7
October	148.8	37.8	7.5	194.1
November	148.8	14.0	24.3	187.1
December	148.8	. . .	40.3	189.1
Total	1,785.6	431.8	199.6	2,417.0

*Includes all operations in the milking parlor.
**Labor for cutting silage is not included. The silage cutting operation is assumed to be custom hired.
***Includes fence maintenance, pasture clipping, spraying, and feeding replacement heifers and dry cows.

APPENDIX TABLE 29.—Monthly Labor Requirements for the Operation of Dairy Farm C, North Central Louisiana

Month	Milking*	Pasture and hay	Other**	Total
		(Hours)		
January	237.9	. . .	33.5	271.4
February	237.9	9.0	33.5	280.4
March	237.9	29.0	10.6	277.5
April	237.9	20.0	10.1	268.0
May	237.9	164.3	11.1	413.3
June	237.9	245.7	11.1	494.7
July	237.9	9.0	11.1	258.0
August	237.9	. . .	30.2	268.1
September	237.9	88.0	11.6	337.5
October	237.9	. . .	39.1	277.0
November	237.9	. . .	33.5	271.4
December	237.9	20.0	33.5	291.4
Total	2,854.8	585.0	268.9	3,708.7

*Includes all operations in the dairy building.
**Includes fence maintenance, pasture clipping, spraying, and feeding replacement heifers and dry cows.

APPENDIX TABLE 30.—Monthly Labor Requirements for the Operation of Dairy Farm D, North Central Louisiana

Month	Milking*	Pasture, hay, and silage**	Other***	Total
		(Hours)		
January	186	...	30.4	216.4
February	186	17.5	30.4	233.9
March	186	72.0	9.7	267.7
April	186	...	40.9	226.9
May	186	92.2	8.9	287.1
June	186	64.4	9.4	259.8
July	186	46.6	10.3	242.9
August	186	43.8	9.4	239.2
September	186	138.5	10.1	334.6
October	186	47.3	9.4	242.7
November	186	17.5	30.4	233.9
December	186	...	50.4	236.4
Total	2,232	539.8	249.7	3,021.5

*Includes all operations in the dairy building.
**Labor for cutting silage is not included. The silage cutting operation is assumed to be custom hired.
***Includes fence maintenance, pasture clipping, spraying, and feeding replacement heifers and dry cows.

APPENDIX TABLE 31.—Estimated Annual Costs and Returns per Acre for the Cotton Enterprise, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Costs and returns
			(Dollars)
Costs			
Seed (pounds)	26	0.09	2.34
Fertilizer			
N (pounds)	48	0.12	5.76
P (pounds)	48	0.09	4.32
K (pounds)	48	0.07	3.36
Insecticide (pounds)	56	0.08	4.48
Thinning and hoeing (days)	2.7	3.50	9.45
Harvesting (pounds)	1,010	0.032	32.32
Ginning (pounds)	444	0.02	8.88
Lime (prorated over seven years)			0.93
Labor (hours)	9.4	..	..
Tractor (hours)	9.4	0.59	5.55
Total cash expenses			77.39
Returns			
Cotton lint (pounds)	444	0.304	134.98
Cotton seed (tons)	0.3	46.71	14.01
Total returns			148.99
Net returns			71.60

APPENDIX TABLE 32.—Estimated Annual Costs and Returns per Acre for the Corn Enterprise, Cotton Farms A and B, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Costs and returns
			(Dollars)
Costs			
Seed (pounds)	10	0.22	2.20
Fertilizer			
N (pounds)	66	0.12	7.92
P (pounds)	30	0.09	2.70
K (pounds)	27	0.07	1.89
Lime (prorated over seven years)			0.93
Labor (preharvest) (hours)	5.8		
Tractor (preharvest) (hours)	5.8	0.59	3.42
Labor (harvest) (hours)	8.0	0.50	4.00
Tractor (harvest) (hours)	1.4	0.59	.83
Total cash expenses			23.89
Returns			
Corn (bushels)	43	1.10	47.30
Net returns			23.41

APPENDIX TABLE 33.—Estimated Annual Costs and Returns per Head, Beef Enterprise, Cotton Farm Plans, North Central Louisiana, (1958-59 Prices)

Item	Amount	Cost per unit	Costs and returns
			(Dollars)
Costs			
Unimproved pasture (acres)	1.5	1.21	1.82
Improved pasture (acres)	0.6	7.16	4.30
Hay meadow (acres)	0.2	96.44	19.29
Salt (cwt.)	0.1	1.49	0.15
Minerals (cwt.)	0.1	1.25	0.12
Veterinary fees and medicine* (cow)	1.0	1.13	1.13
Spray materials and worming* (cow)	1.0	0.43	0.43
Marketing (4% of gross sales)			2.82
Total cash cost			30.06
Returns**			
Calves (cwt.)	2.88	22.00	63.36
Cull cows (cwt.)	0.52	14.00	7.28
Total returns			70.64
Net returns (per head)			40.58

*Based on farm records of sample beef cattle farms.
**Assumes an 8 percent replacement program, 3 percent death loss, and 90 percent calf crop.

APPENDIX TABLE 34.—Estimated Monthly Labor Requirements for the Operation of Cotton Farm A, North Central Louisiana

Month	Enterprise			
	Cotton	Corn	Livestock	Total
			(Hours)	
January	16.2	...	14.9	31.1
February	32.4	30.8	16.2	79.4
March	...	21.7	14.3	36.0
April	62.6	9.0	9.1	80.7
May	273.5	25.3	...	298.8
June	69.5	18.1	1.3	88.9
July	46.4	...	33.2	79.6
August	...	...	1.3	1.3
September	927.2	144.7	...	1,071.9
October	...	...	39.0	39.0
November	...	...	7.5	7.5
December	...	...	14.9	14.9
Total	1,427.8	249.6	151.7	1,829.1

APPENDIX TABLE 35.—Estimated Monthly Labor Requirements for the Operation of Cotton Farm B, North Central Louisiana

Month	Enterprise			
	Cotton	Corn	Livestock	Total
			(Hours)	
January	26.6	...	22.9	49.5
February	53.2	45.9	24.9	124.0
March	...	32.4	22.0	54.4
April	102.6	13.5	14.0	130.1
May	448.4	37.8	...	486.2
June	114.0	27.0	2.0	143.0
July	76.0	...	51.0	127.0
August	...	...	2.0	2.0
September	1,520.0	216.0	...	1,736.0
October	...	...	60.0	60.0
November	...	...	11.5	11.5
December	...	...	22.9	22.9
Total	2,340.8	372.6	233.2	2,946.6

APPENDIX TABLE 36.—Estimated Costs and Returns, Hog Enterprise, General Farms, North Central Louisiana, (1958-59 Prices)[1]

Item	Amount	Price per unit	Total
			(Dollars)
Corn (hogged off)[2] (acres)	17.5	19.06	333.55
Pasture[3] (acres)	5.0	11.51	57.55
Feed[4]			
Corn (bushels)	626	.56	350.56
Supplement (pounds)	7,290	.052	379.08
Starter (pounds)	4,640	.055	255.20
Salt (cwt.)	1.4	1.49	2.09
Minerals (cwt.)	6.3	1.25	7.87
Vaccination (C.C.)	1,600	.016	25.60
Veterinary and medicine[5] (head)	80	.84	67.20
Depreciation charges of farrowing house and equipment[6]			31.75
Marketing charges (4% of gross sales of animals)			115.00
Total cash costs			1,625.45
Returns			
Hogs[7] (cwt.)	160.0	18.00	2,880.00
Net returns			1,254.55

[1]Enterprise consists of 10 brood sows, 1 boar, 80 pigs.
[2]Assumes 1.75 acres of corn per head, producing 43 bushels per acre.
[3]Based on pastures of sample farms. Pasture mixture consists of rye grass and common Bermuda fertilized with 200 pounds of 3-12-12 per acre.
[4]Ration was designed to provide nutrient requirements set forth in D.A.E. Circular No. 256, Table 8.
[5]Based on cost per head incurred by sample general farms.
[6]Based on sample farms valuation of farrowing houses and equipment.
[7]Assumes a 20 percent death loss.

APPENDIX TABLE 37.—Estimated Costs and Returns of Beef Enterprise, General Farm A, North Central Louisiana, (1958-59 Prices)*

Item	Amount	Cost per unit	Costs and returns
			(Dollars)
Unimproved pasture (acres)	47	1.21	56.87
Improved pasture (acres)	19	7.16	136.04
Hay meadow (acres)	4	94.44	377.76
Salt (cwt.)	3.1	1.49	4.62
Minerals (cwt.)	3.1	1.25	3.88
Veterinary fees and medicine** (cow)	3.1	1.13	35.03
Spray materials and worming** (cow)	3.1	.43	13.33
Marketing (4% of gross sales of animals)			88.07
Total cash costs			715.60
Returns***			
Calves (cwt.)	89.9	22.00	1,977.80
Cull cows (cwt.)	16.0	14.00	224.00
Total returns			2,201.80
Net returns			1,486.20

*Enterprise consists of 25 brood cows, 3 replacement heifers, and 1 bull.
**Based on records of sample beef cattle farms.
***Assumes an 8 percent replacement program, 3 percent death loss, and 90 percent calf crop.

APPENDIX TABLE 38.—Estimated Costs and Returns of Beef Enterprise, General Farm B, North Central Louisiana, (1958-59 Prices)*

Item	Amount	Cost per unit	Costs and returns
			(Dollars)
Costs			
Unimproved pasture (acres)	70	1.21	84.70
Improved pasture (acres)	28	7.16	200.48
Hay meadow (acres)	6	94.44	566.64
Salt (cwt.)	4.6	1.49	6.85
Minerals (cwt.)	4.6	1.25	5.75
Veterinary fees and medicine** (cow)	4.7	1.13	53.11
Spray materials and worming** (cow)	4.7	0.43	20.21
Marketing (4% of gross sales)			134.00
Total cash costs			1,071.74
Returns***			
Calves (cwt.)	137.0	22.00	3,014.00
Cows (cull) (cwt.)	24.0	14.00	336.00
Total returns			3,350.00
Net returns			2,278.26

*Enterprise consists of 41 brood cows, 1 bull, and 37 calves.
**Based on farm records of sample beef cattle farms.
***Assumes an 8 percent replacement program, 3 percent death loss, and 90 percent calf crop.

APPENDIX TABLE 39.—Estimated Monthly Labor Requirements for the Operation of General Farm A, North Central Louisiana

Month	Enterprise			
	Corn	Hogs	Beef	Total
		(Hours)		
January	. . .	30.0	18.3	48.3
February	83.9	20.0	19.9	123.8
March	60.3	20.0	17.6	97.9
April	25.1	10.0	11.2	46.3
May	70.4	10.0	. .	30.4
June	50.2	10.0	2.0	62.2
July	. . .	10.0	40.8	50.8
August	. . .	10.0	2.0	12.0
September	210.0	20.0	. .	230.0
October	. . .	30.0	48.0	78.0
November	. . .	40.0	9.2	49.2
December	. . .	40.0	18.3	58.3
Total	499.9	250.0	187.3	937.2

APPENDIX TABLE 40.—Estimated Monthly Labor Requirements for the Operation of General Farm B, North Central Louisiana

Month	Enterprise				
	Cotton	Corn	Hogs	Beef	Total
			(Hours)		
January	5.6	. . .	30.0	22.9	58.5
February	11.2	111.9	20.0	24.9	168.0
March	. . .	80.4	20.0	22.0	122.4
April	21.6	33.5	10.0	14.0	79.1
May	116.1	93.8	10.0	. .	219.9
June	24.0	67.0	10.0	2.0	103.0
July	16.0	. .	10.0	51.0	77.0
August	. .	. .	10.0	2.0	12.0
September	320.0	280.0	20.0	. .	620.0
October	. .	. .	30.0	60.0	90.0
November	. .	. .	40.0	11.5	51.5
December	. .	. .	40.0	22.9	62.9
Total	514.5	666.6	250.0	233.2	1,664.3